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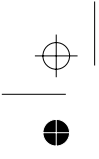
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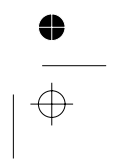
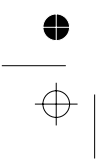
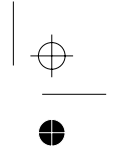
### Legend

In order to identify immediately the type of product described above, please refer to the following abbreviation keys:

BK = Book  
 CD = CD-ROM or CD-I  
 DY = Dictionary  
 HB = Handbook  
 JN = Journal  
 MV = Multi-volume  
 RJ = Review Journal  
 RW = Reference Work  
 TB = Textbook



4/NFP 373



# Agricultural and Biological Sciences

## Bioaccumulation in Marine Organisms

### Effect of Contaminants from Oil Well Produced Water

By **J.M. Neff**, *Battelle, Coastal Resources and Environmental Management, 397 Washington St., Duxbury, MA 02332, USA*

©2002 460 pages  
 ISBN 0-08-0437168 Hardbound  
 Publication: June 2002  
 Price: EUR 160 / USD 160

Large volumes of produced water are generated and discharged to the coastal and ocean waters worldwide from offshore oil and gas production facilities. There is concern that the chemicals in the produced water may harm marine ecosystems. This book summarizes the bioavailability and marine ecotoxicology of metal and organic contaminants that may occur in oil well produced water at concentrations significantly higher than those in ambient seawater. The contaminants of concern include arsenic, barium, cadmium, chromium, copper, lead, mercury, radium isotopes, zinc, monocyclic aromatic hydrocarbons, polycyclic aromatic hydrocarbons, phenols, and bis(2-ethylhexyl)phthalate. The first part of the book is a detailed discussion of the

chemical composition of produced water from offshore oil wells worldwide and its fates following discharge to the ocean. The remaining chapters of the book summarize the current scientific literature on the sources and distributions in the ocean of each of the contaminants of concern and their bioaccumulation and toxicity to marine organisms. This book will be of value to: environmental scientists in the oil and gas industry; marine toxicologists and ecological risk assessors in academia, government, and industry; government regulatory agencies concerned with marine environmental protection. The book advances the concept that bioavailability evaluation must be included in all ecological risk assessments and other environmental assessments of chemical contaminants in marine and freshwater ecosystems.

**Contents:** Preface. Acknowledgements. **1. Produced water.** 1.1 Composition of produced water. 1.2 Volumes of produced water discharged to the ocean. 1.3 Fate of chemicals from produced water in the ocean. 1.4 Toxicity of produced water. **2. Bioaccumulation mechanisms.** 2.1 Introduction. 2.2 Bioavailability. 2.3 Bioaccumulation. 2.4 Bioconcentration. 2.5 Biomagnification. **3. Arsenic**

**in the ocean.** 3.1 Arsenic in seawater. 3.2 Arsenic in marine sediments. 3.3 Bioaccumulation and biotransformation of arsenic. 3.4 Concentrations of arsenic in tissues of marine organisms. 3.5 Toxicity of arsenic to marine organisms. 3.6 Environmental effects of arsenic in produced water. **4. Barium in the ocean.** 4.1 Barium in seawater. 4.2 Barium in marine sediments. 4.3 Bioaccumulation of barium by marine organisms. 4.4 Concentrations of barium in tissues of marine organisms. 4.5 Toxicity of barium to marine organisms. 4.6 Environmental effects of barium in produced water. **5. Cadmium in the ocean.** 5.1 Cadmium in seawater. 5.2 Cadmium in marine sediments. 5.3 Bioaccumulation of cadmium by marine organisms. 5.4 Concentrations of cadmium in tissues of marine organisms. 5.5 Toxicity of cadmium to marine organisms. 5.6 Environmental effects of cadmium in produced water. **6. Mercury in the ocean.** 6.1 Mercury in seawater. 6.2 Mercury in marine sediments. 6.3 Bioaccumulation of mercury by marine organisms. 6.4 Concentrations of mercury in tissues of marine organisms. 6.5 Toxicity of mercury to marine organisms. 6.6 Environmental effects of mercury in produced water. **7. Chromium in the ocean.** 7.1 Chromium in seawater. 7.2 Chromium in marine

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#### **15. Polycyclic aromatic hydrocarbons in the ocean.**

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15.7 Toxicity of polycyclic aromatic hydrocarbons to marine organisms.

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# Chemistry and Chemical Engineering

## Absorbent Technology

Edited by **P.K. Chatterjee**, *Nutech International Co., 331 McDowell Drive, East Brunswick, NJ 08816, USA*, **B.S. Gupta**, *North Carolina State University, Raleigh, NC 27695-8301, USA*

©2001 499 pages  
**ISBN 0-444-50000-6 Hardbound**  
**Publication: April 2002**  
**Price: EUR 220 / USD 220**

Textile Science and  
 Technology, Volume 13

This publication discusses the theoretical aspects of absorbency as well as the structure, properties and performance of materials. The chapters are arranged in an approach for the reader to advance progressively through fundamental theories of absorbency to more practical aspects of the technology. Topics covered include scientific principles of absorbency and structure property relationships; material technology including super absorbents, non-woven, natural and synthetic fibres and surfactants; absorbency measurement techniques and technology perspective. The reader is provided with current status information on technology

and is also informed on important developments within the field.

### AUDIENCE

For both academic and industrial scientists and engineers engaged in research and development on absorbency and absorbent products.

**Contents:** Porous structure and liquid flow models (P.K. Chatterjee, B.S. Gupta). Surface tension and surface energy (A.M. Schwartz). Fluid absorption in high bulk nonwovens (B.S. Gupta). Introduction to computational modelling and its applications in absorbent technology (S. Kangovi). The role of surfactants (J.C. Berg). Fibers and fibrous materials (L. Rebenfeld). Cross-linked cellulose and cellulose derivatives (R.A. Young). Synthetic superabsorbents (T.L. Staples, P.K. Chatterjee). Polymer grafted cellulose and starch (V.T. Stannett *et al.*). Nonwovens in absorbent materials (B.S. Gupta, D.K. Smith). Measurement techniques for absorbent materials and products (B.S. Gupta, P.K. Chatterjee). Products and technology perspective (P.K. Chatterjee). Subject index.

### ELSEVIER

[www.elsevier.com/locate/isbn/0444500006](http://www.elsevier.com/locate/isbn/0444500006)

## Biodiversity and Natural Product Diversity

Edited by **F. Pietra**, *Via della Fratta 9, I-55100 Lucca, Italy*

©2002 368 pages  
**ISBN 0-08-043707-9 Hardbound**  
**Publication: March 2002**  
**Price: EUR 125 / USD 125**  
**ISBN 0-08-043706-0 Paperback**  
**Price: EUR 45 / USD 45**

Tetrahedron Organic Chemistry  
 Series, Volume 21

This, the most recent contribution to the Tetrahedron Organic Chemistry series, provides an integrated evaluation of the diversity of natural products in relation to biodiversity. The ongoing exploitation of biological resources, while maintaining an effective equilibrium on Earth, depends much on the conservation of biodiversity. To this end, parts one and two focus on biodiversity from all viewpoints, while explaining the link with natural products. The third section concentrates on the molecular-shape level, as a link to ecosystem and biodiversity, while the fourth section tackles actual functionalization, as a link to biodiversity at species level. Part five addresses the diversification of these resources from

biotechnology and chemical technology, while the final part is concerned with maintaining natural product diversity on Earth.

#### AUDIENCE

Primarily addressed to professionals in life sciences (ecologists and biotechnologists). Biotechnologists include people in drug discovery and natural products chemistry.

**Contents:** Part I. The concept of biodiversity. **Defining Biodiversity.** Biodiversity at species level. Biodiversity at higher taxonomic levels. Biodiversity at genetic level. Biodiversity at ecosystem level. **The Course of Biodiversity.** Part II. The relationship between biodiversity and natural product diversity. **Taxonomy, Phylogeny, and Natural Products. The Problem of Unculturable Species. Natural Product Diversity: at which rank?** The molecular rank. The taxonomic and ecological rank. Part III. Natural product diversity at ecosystem level. **Terrestrial and Freshwater Biomes.** Tropical rain forest, grassland and savanna, scrub and deciduous forest. American tropical and subtropical land. African tropical and subtropical land. Eastern tropical and subtropical land. Temperate grassland, deciduous forest, and chaparral. The taiga and the tundra. **The Oceans.** Zonation of the seas and oceans. Indo-Pacific. Caribbean. Panamanian. Mediterranean. North Pacific. South Pacific North Atlantic. South Atlantic. Zealandic. Arctic. Antarctic. Internal seas. **The Widespread Distribution of Natural Products.** The

widespread distribution of natural products on land. The widespread distribution of natural products in the oceans. Found both on land and in the sea. **Terrestrial vs Marine Natural Product Diversity. Life under Extreme Conditions. Graphic Analysis of the Skeletal Diversity and Complexity of Natural Products.** Part IV. Natural product diversity at functional level. **Signaling, Defensive, and Environmentally Relevant Metabolites.**

Recruiting, alarming, and growth stimulating agents. Antifeedant and antimicrobial agents. Toxins and environmentally noxious metabolites. Messengers of biodiversity. Mediators of signals. **Exploiting Natural Product Diversity.** Food, food additives, and food processing from land and the oceans. Commercial natural drugs and folk medicines. Natural products, derivatives, and extracts in development as drugs. Fragrances and cosmetics. Technological compounds and laboratory tools. Drugs of abuse. Part V. Biotechnology and chemical synthesis of natural products. **The Role of Biotechnology.** Biotechnology and natural products. Biocatalysis. **The Role of Chemical Synthesis.** Part VI. Threatening and management of natural product diversity. **Threatening Natural Product Diversity.** Fossil molecules and past natural product diversity. Endangered natural products. Threats from farming and urbanization. Threats from the introduction of alien species. Threats from toxicity, ecotoxicity, and climate changes following industrialization. Threats from biotechnology. A tentative list of endangered natural

products. Our biased view?

**Management of Natural Product Diversity.** Preserving natural product diversity through the management of living species. Preserving natural product diversity through collections and gene banks.

#### ELSEVIER

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## Second Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds

Edited by **M. Sainsbury**, *School of Chemistry, The University of Bath, Claverton Down, Bath BA2 7AY, UK*

### Volume V: Topical Volumes and Cumulative Index

## Organic Electrochemistry

Edited by **M. Sainsbury**

©2002 528 pages  
ISBN 0-444-50900-3 Hardbound  
Publication: May 2002  
Price: EUR 238 / USD 238

Second Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds, Volume V

In the Second Edition of Rodd's Chemistry of the Carbon Compounds and its Supplements some topics did not receive special attention since the foot print of the series was laid down at a time when many areas were,

at best, in their infancy. For this reason, reviews of this subject and similar more specialised subjects are to form the basis for a number of Topical Volumes. The electrochemistry of organic compounds, particularly its value in synthesis, was rarely highlighted in Rodd; this despite the advantage the method has in minimising over reaction. This book, the second of the Topical Volumes, seeks to redress this situation and here the electrochemical reactions of some of the main groups of organic compounds are surveyed. Specific attention is given to the use of electrochemistry in synthesis; not just of complex compounds, but where anodic oxidation, or cathodic reduction, offers viable alternatives to traditional 'chemical' methods.

**Contents: Chapter headings.**

Electrochemistry of halogenated organic compounds (L.J. Klein, D.G. Peters). Carbonyl compounds (aldehydes, ketones, acetals, esters, amides and acids) (J. Grimshaw). Nitro compounds, azides and related compounds (H. Lund). The electrochemistry of arenes and styrenes and arylalkynes (A.J. Savall). Polycyclic arenes, quinomethanes and larger ring systems, including heterocycles (S. Yamamura). The electrochemistry of ethers, epoxides, azirines, aziridines, oxetanes, and lactams (E. Duñach). The electrochemistry of six-membered heterocycles and their benzo derivatives (F. Barba, B. Batanero). Natural products and medicinally important compounds (J.D. Parrish, R.D. Little).

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044450589X

**Studies in Natural Product Chemistry**

Edited by **Atta-Ur Rahman, H.E.J.**  
*Research Institute of Chemistry,  
University of Karachi, Karachi  
75270, Pakistan*

**Volume 26**

**Bioactive Natural Products, Part G**

Edited by **Atta-ur- Rahman**

©2002 1364 pages  
ISBN 0-444-51004-4 Hardbound  
Publication: March 2002  
Price: EUR 460 / USD 460

Studies in Natural Products  
Chemistry, Volume 26

Volume 26 of Studies in Natural Product Chemistry presents the chemistry of a large number of exciting natural products. All of the chapters reflect the importance of the biological activity of nature's molecules - activity which continues to inspire the evolution of new drugs against disease. Topics covered include: the triterpenoid saponins from the Caryophyllaceae family, recent developments in the total synthesis of bioactive marine fatty acids, the chemistry and biological activity of secologanin, lignans, saffron and the bark of *Fraxanus ornus*. A range of natural compounds which are utilised in

the assessment of environmental issues are also discussed, as are the pharmacological activities and applications of essential oils, plant growth regulators and phytotoxins. The chemistry and bioactivity of secondary metabolites is reviewed in this volume, together with the structure, chemistry and biological activity of resveratrol oligomers. Recent developments in the chemical behaviour, toxicology and chemical ecology of compounds found in bracken fern are reviewed. The occurrence, structure and bioactivity of 1,7-diarylheptanoids is covered, together with the structures and biological activities of natural insecticides. Potential anti-parasitic substance from natural sources is presented here, as is the chemistry and bioactivity of nitric oxide (NO) in plant and animal cells. The role of O-aminophenol-type tryptophan metabolites in living organisms is also discussed. Other topics include recent developments on structural studies and pharmacology of strychnos alkaloids, the occurrence, structure, properties, metabolism, biological activities and uses of carbohydrates having the hexo-D-manno configuration, sponges belonging to the lithistid order and the chemistry and biological properties of copper/topa quinone-containing amine oxidases.

**Contents: Paper headings.**

Triterpenoid saponins from *caryophyllaceae* family (Zhonghua Jia *et al.*). Recent developments in the total synthesis of bioactive marine fatty acids (N.M. Carballeira). Some aspects of the chemistry of

secologanin (L.F. Szabó). The lignans of *Podophyllum* (R.M. Moraes). New findings on the bioactivity of lignans (J.L. Ríos *et al.*). Crocus sativus-biological active constituents (M. Liakopoulou-Kyriakides, D.A. Kyriakidis). Chemical components of *Fraxinus ornus* bark-structure and biological activity (I.N. Kostova, T. Iossifova). Natural compounds for the management of undesirable freshwater phytoplankton blooms (K.K. Schrader *et al.*). Pharmacological activities and applications of *Salvia sclarea* and *Salvia desoleana* essential oils (A.T. Peana, M.D.L. Moretti). Secondary metabolites with antinematodal activity (E.L. Ghisalberti). Resveratrol oligomers: structure, chemistry, and biological activity (R.H. Cichewicz, S.A. Kouzi). Bioactive metabolites from phytopathogenic bacteria and plants (A. Evidente, A. Motta). *Rubia tinctorum* L. (G.C.H. Derksen, T.A. Van Beek). The chemistry and toxicology of bioactive compounds in bracken fern (*Pteridium* Sp.), with special reference to chemical ecology and carcinogenesis (M.E. Alonso-Amelot). Flavonoids as nutraceuticals: structural related antioxidant properties and their role on ascorbic acid preservation (F.R. Marín *et al.*). Natural products as potential antiparasitic drugs (O. Kayser *et al.*). Natural insecticides: structure diversity, effects and structure-activity relationships - A case study (A. González-Coloma *et al.*). Occurrence, structure, and bioactivity of 1,7-diarylheptanoids (P. Claeson *et al.*). Nitric oxide: chemistry and bioactivity in animal and plant cells

(D. Wendehenne *et al.*). *o*-Aminophenol-type tryptophan metabolites: 3-hydroxykynurenine, 3-Hydroxyanthranilic acid, and their role in living organisms (A. Rescigno, E. Sanjust). New contributions to the structure elucidation and pharmacology of *Strychnos* alkaloids (P. Rasoanaivo *et al.*). Occurrence of biologically active 2-thioxopyrrolidines and 3,5-disubstituted 2-thiohydantoin from the pungent principle of radish (*Raphanus sativus* L.) (Yasushi Uda *et al.*). Structure, occurrence and roles of carbohydrates with the hexo-D-manno configuration (N.K. Matheson). The chemistry of lithistid sponge: a spectacular source of new metabolites (M. Valeria D'auria *et al.*). Copper/topa quinone-containing amine oxidases - recent research developments (M. Šebela *et al.*).

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### Surfactants: Chemistry, Interfacial Properties, Applications

Edited by **V.B. Fainerman**, *International Medical Physicochemical Centre, Donetsk Medical University, 16 Ilych Av. Donetsk 83003, Ukraine*, **D. Möbius**, *Max-Planck Institut für Biophysikalische Chemie, PO Box 2841, 37077 Göttingen, Germany*, **R. Miller**, *Max-Planck Institut für Kolloid und Grenzflächenforschung, Am Mühlentberg 1, 14476 Golm, Germany*

©2001 678 pages  
ISBN 0-444-50962-3 Hardbound  
Publication: December 2001  
Price: EUR 285 / USD 285

Studies in Interface Science,  
Volume 13

This publication provides comprehensive material on the chemical and physical attributes of surfactants and new models for the understanding of structure-property relationships. *Surfactants Chemistry, Interfacial Properties, Applications* provides efficient instruments for the prognostication of principal physicochemical properties and the technologic applicability from the structure of a surfactant through the discussion of interrelations between the chemical structure, physicochemical properties and the efficiency of technologic application.

Also included are informative overviews on new experimental techniques and abundant reference material on manufacturers, nomenclature, product properties, and experimental examples. The publication is accompanied by a CD-ROM, which is needed for the application of the thermodynamic and kinetic models to experimental data.

#### AUDIENCE

For physical chemists, chemical engineers and colloid chemists.

**Contents: Chapter headings. Selected papers. Chemistry of Surfactants.** Nonionic surfactants. Anionic surfactants. Cationic surfactants. Amphoteric and Zwitterionic surfactants.



Structure/performance relations in surfactants. **Thermodynamics of Adsorption of Surfactants at the Fluid Interfaces.** Chemical potentials of surface layers. Interfacial layer model. Mixtures of non-ionic surfactants. Mixtures of ionic surfactants. Surface layers of surfactants able to change orientation. Aggregation of adsorbing molecules. Adsorption of proteins and protein/surfactant mixtures. Penetration thermodynamics. Effect of temperature on the surface tension of surfactant solutions. **Equilibrium Adsorption Properties of Single and Mixed Surfactant Solutions.** Theoretical models for individual surfactant solutions. Non-ionic and amphoteric surfactants. Ionic surfactants. General features of the adsorption of individual surfactants. Mixtures of non-ionic surfactants. Mixtures of ionic surfactants. Simple model for mixed surfactant solutions. **Dynamics of Adsorption from Solutions.** General models for adsorption kinetics and relaxations of surfactants. Diffusion controlled adsorption kinetics. Non-diffusional kinetics and mixed models. Non-diffusional kinetics and mixed models. Interfacial relaxations. Experimental techniques. Experimental results on adsorption kinetics. Experimental results on interfacial relaxations. Penetration kinetics experiments. **Adsorption from Micellar Solutions.** Theory of micellisation. Equilibrium surface properties of micellar solutions. Micellisation kinetics. Diffusion in micellar solutions. Dynamic surface tension of micellar solutions. Dynamic surface elasticity of micellar

solutions. Capillary wave studies of micellar solutions. **Theory and Practical Application Aspects of Surfactants.** Physicochemical bases of surfactant application. Physicochemical bases of surfactant application. Surfactants and control of emulsion properties. Surfactants in multiphase dispersed systems. The use of surfactants to meet the needs of man. Surfactants and civilisation development. Surfactants in novel technologies. Surfactants and environment. **Software Tools to Interpret the Thermodynamics and Kinetics of Surfactant Adsorption.** Features common to all programs. IsoFit. NonlonMix. IonMix. WardTordai.

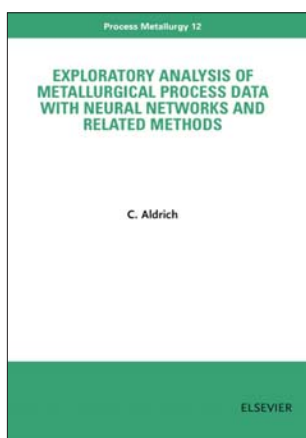
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# Earth and Planetary Sciences

## Exploratory Analysis of Metallurgical Process Data with Neural Networks and Related Methods



By **C. Aldrich**, *Department of Chemical Engineering, Faculty of Engineering, University of Stellenbosch, Banhoek Road, Stellenbosch 7600, South Africa*

©2002 388 pages  
 ISBN 0-444-50312-9 Hardbound  
 Publication: March 2002  
 Price: EUR 182 / USD 182

Process Metallurgy, Volume 12

This volume is concerned with the analysis and interpretation of multivariate measurements commonly found in the mineral and metallurgical industries, with the emphasis on the use of neural

networks.

The book is primarily aimed at the practicing metallurgist or process engineer, and a considerable part of it is of necessity devoted to the basic theory which is introduced as briefly as possible within the large scope of the field. Also, although the book focuses on neural networks, they cannot be divorced from their statistical framework and this is discussed in length. The book is therefore a blend of basic theory and some of the most recent advances in the practical application of neural networks.

### Contents: 1. Introduction to neural networks.

1.1 Background. 1.2 Artificial neural networks from an engineering perspective. 1.3 Brief history of neural networks. 1.4 Structures of neural networks. 1.5 Training rules. 1.6 Neural, network models. 1.7 Neural networks and statistical models. 1.8 Applications in the process industries.

### 2. Training of neural networks.

2.1 Gradient descent methods. 2.2 Conjugate gradients. 2.3 Newton's method and quasi-Newton method. 2.4 Levenberg-Marquardt algorithm. 2.5 Stochastic methods. 2.6 Regularization and pruning of neural network model. 2.7 Pruning algorithms for neural networks. 2.8 Constructive algorithms for neural network.

### 3. Latent variable methods.

3.1 Basics of latent structure analysis. 3.2 Principal component

analysis. 3.3 Nonlinear approaches to latent variable extraction. 3.4 Principal component analysis with neural networks. 3.5 Example 2: feature extraction from digitised images of industrial flotation froths with auto associative neural networks. 3.6 Alternative approaches to nonlinear principal component analysis. 3.7 Example 1: low-dimensional reconstruction of data with non linear principal component methods. 3.8 Partial least squares (PLS) models. 3.9 Multivariate statistical process control.

### 4. Regression models.

4.1 Theoretical background to model development. 4.2 Regression and correlation. 4.3 Multicollinearity. 4.4 Outliers and influential observations. 4.5 Robust regression models. 4.6 Dummy variable regression. 4.7 Ridge regression. 4.8 Continuum regression. 4.9 Case study: calibration of an on-line diagnostic monitoring system for comminution in a laboratory-scale ball mill. 4.10 Nonlinear regression models. 4.11 Case study 1: modelling of a simple bimodal function. 4.12 Nonlinear modelling of consumption of an additive in a gold l-each plant.

### 5. Topographical mappings with neural networks.

5.1 Background. 5.2 Objective functions for topographic maps. 5.3 Multidimensional scaling. 5.4 Sammon projections. 5.5 Example 1: artificially generated and benchmark data

sets. 5.6 Example 2: visualization of flotation data from a base metal flotation plant. 5.7 Example 3: monitoring of a froth flotation plant. 5.8 Example 4: analysis of the liberation of gold with multi-dimensionally scaled maps. 5.9 Example 4: monitoring of metallurgical furnaces by use of topographic process maps.

**6. Cluster analysis.** 6.1 Similarity measures. 6.2 Grouping of data. 6.3 Hierarchical cluster analysis. 6.4 Optimal partitioning (K-means clustering). 6.5 Simple examples of hierarchical and K-means cluster analysis. 6.6 Clustering of large data sets. 6.7 Application of cluster analysis in process engineering. 6.8 Cluster analysis with neural networks.

**7. Extraction of rules from data with neural networks.**

7.1 Background. 7.2 Neurofuzzy modeling of chemical process systems with ellipsoidal radial basis function neural networks and genetic algorithms. 7.3 Extraction of rules with the artificial neural network decision tree (ANN-DT) algorithm. 7.4 The combinatorial rule assembler (CORA) algorithm. 7.5 Summary.

**8. Introduction to the modelling of dynamic systems.**

8.1 Background. 8.2 Delay coordinates. 8.3 Lag or delay time. 8.4 Embedding dimension. 8.5 Characterization of attractors. 8.6 Detection of nonlinearities. 8.7 Singular spectrum analysis. 8.8 Recursive prediction.

**9. Case studies: dynamic systems analysis and modelling.**

9.1 Effect of noise on periodic time series. 9.2 Autocatalysis in a continuous stirred tank reactor. 9.3 Effect of measurement and dynamic noise on the identification of an autocatalytic

process. 9.4 Identification of an industrial platinum flotation plant by use of singular spectrum analysis and delay coordinates. 9.5 Identification of a hydrometallurgical process circuit.

**10. Embedding of multivariate dynamic process systems.**

10.1 Embedding of multivariate observations. 10.2 Multidimensional embedding methodology. 10.3 Application of the embedding method. 10.4 Modelling of NO<sub>x</sub>-Formation.

**11. From exploratory data analysis to decision support and process control.**

11.1 Background. 11.2 Anatomy of a knowledge-based system. 11.3 Development of a decision support system for the diagnosis of corrosion problems. 11.4 Advanced process control with neural networks. 11.5 Symbiotic adaptive neuro-evolution (SANE). 11.6 Case study: neurocontrol of a ball mill grinding circuit. 11.7 Neurocontroller development and performance. 11.8 Conclusions. References. Index. Appendix: data files.

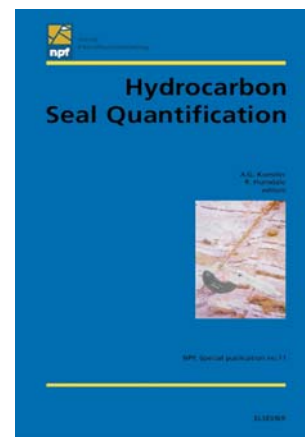
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**Hydrocarbon Seal Quantification**

Edited by **A.G. Koestler**, *GEO-RECON A.S., Munkedamsveien 67, N-0270 Oslo, Norway*, **R. Hunsdale**, *Phillips Petroleum Company, P.O. Box 220, N-4098 Tananger, Norway*

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Price: EUR 105 / USD 105



Norwegian Petroleum Society (NPF), Special Publications, Volume 11

This volume contains 17 selected papers reflecting the flavour of the Norwegian Petroleum Society conference on hydrocarbon seals quantification and showing the recent significant advances in the understanding and application of hydrocarbon seal methodologies. Three broad categories are covered in this book: methodologies addressing cap-rock integrity, methodologies relating to fault seal and case studies both from the hydrocarbon basins of Northwestern Europe and in the form of outcrop examples. With the North Sea, Norwegian Sea and Atlantic Margin moving along their respective basin maturity and development curves, exploration is being forced deeper into high pressure/high temperature terrains, while exploitation and development requires greater precision and realism in reservoir

simulations to maximise drilling strategies to prolong field life. In all instances the need for predictive tools and methodologies that address the integrity and behaviour of top and lateral (fault) seals to hydrocarbon traps, both in the static and dynamic state, have been identified as key risk factors and this is reflected in this volume.

**Contents: Methodology - cap-rock integrity.** 1. Shale gouge ratio - calibration by geohistory (Y. Graham). 2. Rock stress in sedimentary basins and implications on trap integrity (H.M.N. Bolås, C. Hermanrud). 3. The role of diagenesis in the formation of fluid overpressures in clastic rocks (H.M. Helset, *et al.*). 4. Prediction of sealing capacity by equivalent grain size method (K. Nakayama, D. Sato). 5. Effective permeability of hydrofractured sedimentary rocks (M. Wangen). 6. Geomechanical simulations of top seal integrity (H. Lewis, Olden, Couples). 7. Top seal assessment in exhumed basin settings - some insights from Atlantic Margin and borderland basins (A.G. Corcoran, D.V. Doré). **Methodology - fault sealing.** 8. Empirical estimation of fault rock properties (S. Sperrevik, P. Gillespie). 9. A method for including the capillary properties of faults in hydrocarbon migration models (C. Childs, *et al.*). 10. Fault seal quantitative assessment in hydrocarbon-compartmentalized structures using fluid pressure data (D. Grauls, F. Pascaud, T. Rives). 11. Havana - a fault modelling tool (K. Hollund, *et al.*). 12. Reservoir compartmentalization by water-saturated faults - Is evaluation possible with today's

tools? (J.C. Rivenæs, C. Dart). **Case studies.** 13. Geological implications of a large pressure difference across a small fault in the Viking Graben (C. Childs, *et al.*). 14. Leakage from overpressured hydrocarbon reservoirs at Haltenbanken and in the northern North Sea (C. Hermanrud, Christian, H. Marit, N. Bolås). 15. Fault reactivation, leakage potential, and hydrocarbon column heights in the northern North Sea (D. Wiprut, M.D. Zoback). 16. Evaluation of cap-rock integrity in the western (high pressured) Haltenbanken area - a case history based on analysis of seismic signatures in overburden rocks (G.M.G. Teige, *et al.*). 17. Fault seal analysis in unconsolidated sediments: a field study from Kentucky, USA (G. Lewis, R. Knipe, A. Li).

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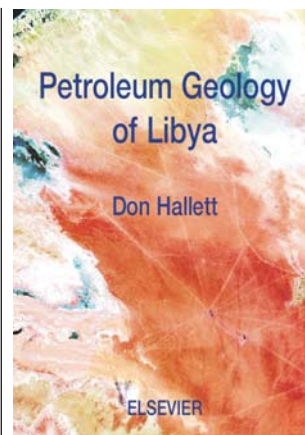
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### Petroleum Geology of Libya

By **D. Hallett**, 13 York House, Courtlands, Sheen Road, Richmond, Surrey TW10 5BD, UK

©2002 508 pages  
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Publication: March 2002  
Price: EUR 114 / USD 114

Libya has the largest petroleum reserves of any country in Africa and since production began in 1961 over 20 billion barrels of oil have been produced.



Libya is scheduled to reach the mid-point of depletion of reserves in 2001 and this provides a timely point at which to review the state of petroleum exploration in Libya. A large amount of data has been published on the geology of Libya, but it is scattered through the literature; much of the older data has been superseded, and several of the key publications, especially those published in Libya, are difficult to find. This book represents the first attempt to produce a comprehensive synthesis of the petroleum geology of Libya. It is based exclusively on published data, supplemented by the author's experience gained during ten years work in Libya. The aim of the book is to systematically review the plate tectonics, structural evolution, stratigraphy, geochemistry, and petroleum systems of Libya, and provides valuable new data on fields, production, and reserves. This volume will provide a ready source of reference to individuals and companies who wish to obtain an overview of the petroleum geology of Libya, and will save them the laborious task



of sifting through hundreds of publications to find the data they require. The book includes 148 newly drawn figures.

**Contents:** List of figures. Preface. Notes and definitions. **1. History of Libyan oil exploration and production.** 1.1 Before independence. 1.2 The fledgling Libyan oil industry. 1.3 Exploration activity, 1956-1958. 1.4 Bonanza, 1959-1961. 1.5 Events leading to the Petroleum Law of 1965. 1.6 Exploration and production activity, 1962-2965. 1.7 New concession awards and joint ventures, 1966-1969. 1.8 Exploration and production, 1966-1969. 1.9 The revolution and its aftermath, 1969-1974. 1.10 The decline in exploration activity, 1969-1974. 1.11 EPSA I, 1974. 1.12 Consolidation, 1975-1979. 1.13 Turmoil, 1979-1986. 1.14 EPSA II and new discoveries, 1979-1986. 1.15 Sanctions and EPSA III, 1986-1999. 1.16 Reserves. 1.17 Natural Gas. 1.18 Summary. **2. Plate tectonic history of Libya.** 2.1 Introduction. 2.2 Rodinia. 2.3 The break-up of Rodinia. 2.4 The Pan-African orogeny and the assembly of Gondwana. 2.5 Gondwana during the Palaeozoic. 2.6 Pangaea. 2.7 Tethys. 2.8 The development of Tethys. 2.9 Tethys to Mediterranean. **3. Stratigraphy: precambrian and palaeozoic.** 3.1 The development of Libyan stratigraphy. 3.2 Archaean and proterozoic, palaeozoic. 3.3 Cambro-Ordovician. 3.4 Silurian. 3.5 Devonian. 3.6 Carboniferous. 3.7 Permian. **4. Stratigraphy: mesozoic.** 4.1 Triassic. 4.2 Jurassic. 4.3 Lower cretaceous. 4.4 Upper

cretaceous. **5. Stratigraphy: cainozoic.** 5.1 Palaeocene, West Libya. 5.2 Eocene, Western outcrops. 5.3 Oligocene, Western outcrops. 5.4 Miocene, Coastal Plain. 5.5 Pliocene and quaternary. **6. Structure.** 6.1 Southern Libya. 6.2 Western Libya. 6.3 Sirt Basin. 6.4 Cyrenaica. 6.5 Offshore. 6.6 Structural synthesis. 6.7 Summary. **7. Petroleum geochemistry.** 7.1 Introduction. 7.2 Al Kufrah Basin. 7.3 Murzuq Basin. 7.4 Ghadamis Basin. 7.5 Sirt Basin. 7.6 Cyrenaica. 7.7 Offshore. **8. Petroleum systems.** 8.1 Introduction. 8.2 Murzuq Basin. 8.3 Ghadamis Basin. 8.4 Sirt Basin. 8.5 Offshore. **9. Postscript: where are the remaining undiscovered reserves?** 9.1 Introduction. 9.2 Yet-to-find. 9.3 Al Kufrah Basin. 9.4 Murzuq Basin. 9.5 Ghadamis Basin. 9.6 Western Sirt Basin. 9.7 Maradah Trough. 9.8 Western Ajdabiya trough. 9.9 Eastern Ajdabiya trough. 9.10 Eastern Sirt embayment. 9.11 Cyrenaica. 9.12 Offshore. Notes. References. Appendix: glossary of geographic names. Index.

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# Economics, Business and Management

## Financial Risk and Financial Risk Management

Edited by **T. A. Fetherston**,  
*University of Finance, New York, NY 10012 1126*, **J. A. Batten**,  
*Deakin University*

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Research in International Business and Finance, Volume 16

Financial Risk Measurement and Management is an area of endeavor that has had its profile raised every time a significant monetary loss occurs as a result of the utilization (or abuse) of derivative instruments. However, the subject has transcended being only a subject of topical interest. An understanding of Financial Risk Measurement and Management has become essential to survival in all business activity. Financial Risk relates to the volatility of unexpected outcome or movements in financial variables. Financial risk variables arise generically in the form of interest rate risk, foreign exchange risk, equity risk and commodity risk. This volume provides empirical or theoretical insight on those risk

variables. The goal of *Financial Risk and Financial Risk Management* is to provide both laymen and professionals with current analysis, theoretical risk measurement models and empirical findings that will extend their understanding of the financial risk environment. This volume contains findings of many leading academic, professional and regulatory figures in the Financial Risk Arena. The Financial Risk coverage in the volume is eclectic and not encyclopedic. It is impossible to be all-inclusive in one volume and as such the editors included what they felt were an excellent array of current research efforts pertinent to Financial Risk.

**Contents:** Recent global financial crises: lessons learned (W.C. Hunter). Cointegration and asset allocation: a new active hedge fund strategy (C. Alexander, I. Giblin, W. Weddington III). Testing for Contagion during the Asian crises (K. Thanyalapak, D. Filson). An analysis of private loan guarantee portfolios (M. Grendon, V. S. Lai, I. Soumare). Improving value risk for non-normal return distributions (D. Nam, B.E. Gup). Assessing market risk for hedge funds and hedge funds portfolios (F.S. Lhabitant). Equity volatility trading strategy in two closely related indices -a risk management perspective (H.R. Kubli, W. Kemmsies). Optimal

Asian multi-currency strategy portfolios with exact risk attribution (C. Los). The choice of foreign exchange hedging techniques: an international study (R. Faff, A.P. Marshall). Interest rate models in risk management: results for U.S. treasury yields (K.B. Nowman). Increasing linkages of stock markets and price volatility (N.R. Sabri). Tracking errors, changing risks and the asset universe (P. Poomimars, J. Cadle, M. Theobald). Improvements on value at risk measures by combining conditional autoregressive and extreme value approaches (D. Meneguzzo, W. Vecchiato). The hill estimator in financial risk assessment and an application to extremal exchange rate risk (N. Wagner). The ability of regulatory capital models to meet prudential objectives: a credit derivative perspective (E. Wong, T.A. Fetherston, J.A. Batten). Using regression techniques to estimate future hedge ratios, some results from alternative approaches applied to Australian 10 year treasury bond futures (D.E. Allen *et al.*). The LTCM Saga: abuses and chutzpah (J.A. Batten, T.A. Fetherston, W. Hogan). Estimation of mean and variance episodes in the price return of the stock exchange of Thailand (T. Bos, P. Hoontrakul). ADR risk characteristics and measurement (T. Arnold, L. Nail, T. Nixon).



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## Performance Measurement and Management Control

### A Compendium of Research

Edited by **M.J. Epstein**, *Jesse H. Jones Graduate School of Management, Rice University, Houston, TX 77005-1892, USA*  
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Studies in Managerial and  
Financial Accounting, Volume 12

The fields of performance measurement and management control have changed dramatically in recent years. Industry has recognized the importance of the implementation and coordination of strategy with organizational structure, management systems, and managerial behavior. Managers as well as researchers are attempting to find better ways to link performance metrics to strategy through systems like balanced scorecard and shareholder value analysis and to drive improved corporate performance. Researchers are also trying to

better understand the drivers of corporate performance, the linkages between them, and how to measure their impacts on profitability. They are examining which of the various performance measurement and management control systems are more or less effective, how they fit with alternative organizational structures and strategies, and the causes of their successes and failures.

This book contains a compendium of some of the excellent papers presented at a workshop on Performance Measurement and Management Control in October, 2001. Sponsored by the European Institute for the Advanced Study in Management (EIASM) and held in Nice, France, this workshop attracted leading scholars on management control and performance measurement from around the world. The contents of this book represent a collection of leading research in performance measurement and management control and provide a significant contribution to the growing literature in the area.

The research presented here provides the latest academic research along with managerial guidance as to how the use of various strategies, structures, and systems impact corporate performance. The papers address this question using a variety of research methods to explain how performance measurement and management control can aid in the implementation of strategy and the evaluation and improvement of organizational performance. The approaches are used in both for-profit and not-for-profit organizations.

**Contents:** Introduction. Preface.

#### **A New Direction in Management Control and Performance Evaluation.**

Measuring the payoffs of corporate actions: the use of financial and non-financial indicators (M.J. Epstein).

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#### **Management Control in Large Organizations.**

Linking strategic choices and management accounting systems scope: an empirical analysis (E. Boulianne).

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Performance metrics, parenting style and control: a study of MNC subsidiaries in four countries (Lai Hong Chung *et al.*). **Balanced Scorecard and Performance Measurement.**

Strategic management and management control: designing a new theoretical framework (C. Mendoza, O. Saulpic).

Implementation of performance measurement: a comparative study of French and German organizations (I. Gehrke, P. Horváth). The role of balanced scorecard in manufacturing: a tool for strategically aligned work on continuous improvements in production teams? (M. Dabhilakar, L. Bengtsson). The balanced scorecard in hospitals: performance measurement as a driver of change - a case study (S. Baraldi). Balanced scorecards in healthcare experiences from trials with balanced scorecards in five county councils (L-G. Aidemark). **Performance Measurement and Reporting.** The design of



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performance measurement systems for internet "pure plays": is a new paradigm really needed? (P. Maccarrone). The dichotomy between internal and external social performance measures (J. Innes, G. Norris). **Drivers of Performance, Risk and Financial Analysis.** Drivers of the performance of Chinese investment funds - an empirical study involving fourteen Chinese investment funds and thirty American mutual funds (X.Q. Cao, J. Bilderbeek). Strategy and financial ratio performance (M.L. Frigo *et al.*). How do Venture Capitalists handle risk in high-technology ventures? (G.C. Reid, J.A. Smith).

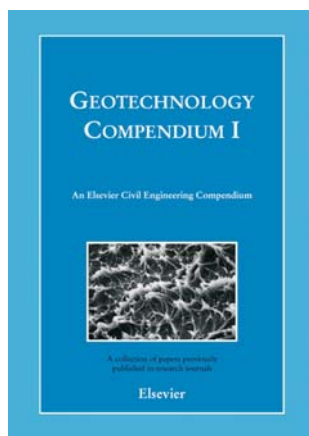
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# Engineering, Energy and Technology

## Dynamics and Control of Process Systems 2001 (2-volume set)



A Proceedings volume from the 6th IFAC Symposium, Jeju Island, Korea, 4-6 June 2001

Edited by **G. Stephanopoulos**, Massachusetts Institute of Technology, USA, **Jay H. Lee**, Georgia Institute of Technology, USA, **En Sup Yoon**, Seoul National University, Korea

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IFAC Proceedings Volumes

This Proceedings contains papers presented at the sixth IFAC

Symposium on Dynamics and Control of Chemical Processes (DYCOPS 2001), which was held on Jeju Island, Korea, on June 4-6, 2001. The triennial DYCOPS symposium is one of IFAC's highest-profile regular events, and has established an enviable reputation for quality. The reputation and coverage of DYCOPS ensures that these events always provide a comprehensive showcase of the best and latest research into all aspects of process control. DYCOPS-6 had as its theme "Bridging Engineering with Science," and explored how the process control community should react to wider developments in chemical engineering research, where molecular-level phenomena and product design as related to materials and biotechnology are becoming increasingly important. Featuring papers by many of the world's leading experts in process control, the Proceedings of DYCOPS-6 form an indispensable resource for process control engineers and for chemical engineers seeking to understand the latest developments in chemical process control. Altogether over 100 papers are presented, on topics such as batch process control, model predictive control, control of distillation columns, fault detection, and many others.

### AUDIENCE

For engineers and researchers in all aspects of control engineering, especially those with an interest in chemical process control.

### Contents: Chapter headings.

#### Selected papers. Volume 1.

**Plenary Papers.** Hybrid system analysis and control via mixed integer optimization (M. Morari).

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Robust nonlinear control of nonsquare multivariable systems (J.C. Cockburn *et al.*). On output feedback nonlinear model predictive control using high gain observers for a class of systems (L. Imsland *et al.*). **Dynamics and Control of Distillation Columns.** Nonlinear non-stiff models of reactive distillation columns with two-time-scale dynamics (N. Vora, P. Daoutidis). Linear MIMO controller design for an industrial reactive distillation column (G. Fernholz *et al.*). **Robust and Optimal Control.** Neuro-dynamic programming method for MPC (J.M. Lee, J.H. Lee). Robust MPC design based on a generalized objective function (D. Wang *et al.*).

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**Parameter Systems.** Analysis of thermal regeneration of cyclic TSA process (D. Ko *et al.*). Particle size distribution control of a semi-batch reactor using model predictive control (K.W. Lee *et al.*).

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**Controllers.** New Smith predictor control for the time delay system (K. Yamada). **State Estimation and Fault Detection.** Application of an extended Kalman filter to a binary distillation column model (S. Dodds *et al.*). **Controllability Analysis and Data Based**

**Modeling.** Modeling of nonlinear systems using extended self-organizing map (W.J. Ang *et al.*). Latent variable selection in partial least squares modelling (B. Li *et al.*). **Poster Papers.** Design and control of fully thermally coupled distillation columns (Y.H. Kim). Profile position control of distillation columns based on a nonlinear wave model (M. Han, S. Park).

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**Geotechnology  
Compendium I**

Edited by **Hudson, C/O James Sullivan, Elsevier Science, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK**

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"Geotechnical Engineering Compendium I" provides a collection of the best articles from the year 2000. The papers, selected by the Editors, are taken from the following journals: Computers and Geotechnics Geotextiles and Geomembranes International Journal of Rock Mechanics and Mining Sciences Journal of Terramechanics Soil Dynamics and Earthquake Engineering Tunnelling and Underground Space Technology

**AUDIENCE**

For all Geotechnical Engineers, students and researchers involved in the field, who want a critically selected collection of the premier research articles published by Elsevier Science, during 2000.

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**Computers and Geotechnics.**

Influence of the kinematic testing conditions on the mechanical response of a sand (D. Sterpi). Formulation of anisotropic failure criteria incorporating a microstructure tensor (S. Pietruszczak, Z. Mroz). Numerical

study of rock and concrete behaviour by discrete element modelling (F. Camborde *et al.*).

**International Journal of Rock Mechanics and Mining Sciences.** A three-dimensional numerical model for thermohydrromechanical deformation with hysteresis in a fractured rock mass (V. Guvanasen, T. Chan). Influence of fracture geometry on shear behavior (S. Gentier *et al.*).

Constraining the stress tensor in the Visund field, Norwegian North Sea: application to wellbore stability and sand production (D. Wiprut, M. Zoback). Estimating mechanical rock mass parameters relating to the Three Gorges Project permanent shiplock using an intelligent displacement back analysis method (Xia-Ting Feng *et al.*).

The strength of hard-rock pillars (C.D. Martin, W.G. Maybee).

**Tunnelling and Underground Space Technology.** Tunnels in Opalinus Clayshale- a review of case histories and new developments (H.H. Einstein). Application of the convergence-confinement method of tunnel design to rock masses that satisfy the Hoek-Brown failure criterion (C. Carranza-Torres, C. Fairhurst).

**Geotextiles and Geomembranes.** Data base of field incidents used to establish HDPE geomembrane stress crack resistance specifications (Y.G. Hsuan). Evaluation and suggested improvements to highway edge drains incorporating geotextiles (G.P. Raymond *et al.*).

Diffusion of sodium and chloride through geosynthetic clay liners (C.B. Lake, R.K. Rowe).

**Journal of Terramechanics.** Simulation of soil deformation and resistance at

bar penetration by the Distinct Element Method (H. Tanaka *et al.*).

Bearing capacity of forest access roads built on peat soils (M.J. O'Mahony *et al.*).

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### Inverse Problems in Engineering Mechanics III

Edited by **M. Tanaka**, *Department of Mechanical Systems Engineering, Faculty of Engineering, Shinshu University, 4-17-1 Wakasato, Nagano 380-8553, Japan,*

**G.S. Dulikravich**, *Department of Mechanical and Aerospace Engineering, Box 19018, University of Texas at Arlington, Arlington, Arlington, TX 76019, USA*

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Inverse Problems are found in many areas of engineering mechanics and there are many successful applications e.g. in non-destructive testing and characterization of material properties by ultrasonic or X-ray techniques, thermography, etc. Generally speaking, inverse problems are concerned with the determination of the input and the characteristics of a system, given certain aspects of its output. Mathematically, such problems are ill-posed and have to be overcome through development of

new computational schemes, regularization techniques, objective functionals, and experimental procedures. This volume contains a selection of peer-reviewed papers presented at the International Symposium on Inverse Problems in Engineering Mechanics (ISIP2001), held in February of 2001 in Nagano, Japan, where recent development in inverse problems in engineering mechanics and related topics were discussed.

The following general areas in inverse problems in engineering mechanics were the subjects of the ISIP2001: mathematical and computational aspects of inverse problems, parameter or system identification, shape determination, sensitivity analysis, optimization, material property characterization, ultrasonic non-destructive testing, elastodynamic inverse problems, thermal inverse problems, and other engineering applications. These papers can provide a state-of-the-art review of the research on inverse problems in engineering mechanics.

#### AUDIENCE

For researchers and engineers interested in inverse problems in engineering mechanics.

**Contents: Chapter headings.** Selected papers. **Inverse Thermal Problems.** Simultaneous estimation of thermophysical properties and heat and mass transfer coefficients of a drying body (G.H. Kanevce *et al.*).

Solution of some inverse heat conduction problems by the dynamic programming filter and BEM (W. Chen, Masa. Tanaka).

The time-to-arrival problem for reconstruction of multidimensional heat flux (R. Bialecki *et al.*).

**Boundary Data and Parameters Identification.** Solution to shape optimization problems of continua on thermal elastic deformation (H. Azegami *et al.*). Alternating boundary element inversion scheme for solving inverse boundary value problem from noisy data and its regularization (S. Kubo *et al.*). Solution of inverse geometry problems using Bezier splines and sensitivity coefficients (I. Nowak *et al.*). Identification of boundary conditions by iterative analyses of suitably refined subdomains at biomaterials interfaces (P. Vena, R. Contro).

**Damage or Defect Detection.** Three dimensional shape reconstruction of defects from measured backscattering waveforms (M. Yamada *et al.*). Modeling of grain pullout in fatigued polycrystalline alumina (M.T. Kokaly *et al.*). Structural damage identification of frame model based on filtering algorithm (R. Endo *et al.*).

**Inverse Problems in Solid Mechanics.** Parameters identification of an elastic plate subjected to dynamic loading by inverse analysis using BEM and Kalman filter (Masa. Tanaka *et al.*). A parameter identification method using observational boundary conditions and wavelet transform (T. Ohkami, T. Uchida). Stress distribution within granular body (A. Matsuoka *et al.*).

**Numerical and Computational Algorithms.** A variational approach for finding the source function of the wave equation (S. Tobe, K. Shiota). Ill-posed problems and a priori information (A. Yagola *et al.*). A parameter estimation problem and its regularization by the conjugate

gradient method (R. Plato). Nonlinear inverse problems of vibrational spectroscopy (G. Kuramshina *et al.*).

**Applications of Computational Algorithms.** Construction of neural network using cluster analysis and Voronoi diagram (K. Amaya *et al.*). Inversion method using spectral decomposition of Green's function (M. Hori, K. Oguni). Application of stress inversion method to develop crustal deformation monitor of Japanese Islands (M. Hori *et al.*).

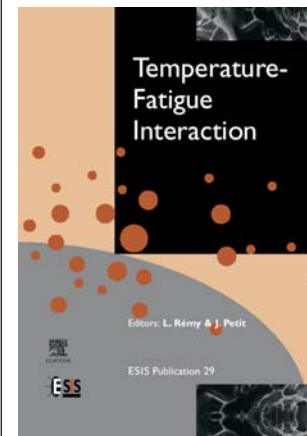
**Inverse Problems in Aeronautics and Fluid Dynamics.** The application of modified output error method on ALFLEX flight data (Y. Koyama, F. Imado). Sensitivity of aerodynamic optimization to parameterized target functions (M. Klein, H. Sobieczky). Using the gasdynamic knowledge base for aerodynamic design and optimization in the sonic speed regime (M. Trenker, H. Sobieczky). Design of a cascade airfoil shape using the discretized Navier-Stokes equations (Y. Horibata).

**Inverse Problems in Electromagnetics.** On identification of magnetic sources in materials (H. Igarashi, T. Honma). 3D electric impedance prospecting simulation based on the dual reciprocity boundary element modelling (T. Horikane *et al.*).

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## Temperature-Fatigue Interaction



Edited by **L. Remy**, *Ecole des Mines de Paris, Centre des Materiaux, CNRS-UMR 7633, B.P. 87, Evry, 91003, France*, **J. Petit**, *Ecole Nationale Supérieure de Mécanique et d'Aérotechnique Laboratoire de Mécanique et Physique des Matériaux, CNRS, Poitiers, France*

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 Publication: March 2002  
 Price: EUR 170 / USD 170

Elsevier International Series on Structural Integrity, Volume 29

This volume contains a selection of peer-reviewed papers presented at the International Conference on Temperature-Fatigue Interaction, held in Paris, May 29-31, 2001, organised by the Fatigue Committee of the Société Française de Metallurgie et de Matériaux (SF2M), under the auspices of the European

Structural Integrity Society. The conference disseminated recent research results and promoting the interaction and collaboration amongst materials scientists, mechanical engineers and design engineers. Many engineering components and structures used in the automotive, aerospace, power generation and many other industries experience cyclic mechanical loads at high temperature or temperature transients causing thermally induced stresses. The increase of operating temperature and thermal mechanical loading trigger the interaction with time-dependent phenomena such as creep and environmental effects (oxidation, corrosion). A large number of metallic materials were investigated including aluminium alloys for the automotive industry, steels and cast iron for the automotive industry and materials forming, stainless steels for power plants, titanium, composites, intermetallic alloys and nickel base superalloys for aircraft industry, polymers. Important progress was observed in testing practice for high temperature behaviour, including environment and thermo-mechanical loading as well as in observation techniques. A large problem which was emphasized is to know precisely service loading cycles under non-isothermal conditions. This was considered critical for numerous thermal fatigue problems discussed in this conference.

#### AUDIENCE

For materials scientists and engineers (mechanical, civil,

automotive, aerospace) with an interest in fatigue-related and structural integrity problems.

#### Contents: Chapter headings. Thermomechanical Behaviour.

Thermo-mechanical fatigue behavior of cast 319 aluminum alloys (C.C. Engler-Pinto Jr. *et al.*). Validating the predictive capabilities: a key issue in modelling thermomechanical fatigue life (H.J. Maier, H.-J. Christ). **Damage under Isothermal Loading.** Effect of notches on high temperature fatigue/creep behaviour of CMSX-4 superalloy single crystals (P. Lukáš *et al.*). Thermomechanical fatigue and aging of cast aluminum alloy: a link between numerical modelling and microstructural approach (I. Guillot *et al.*). Cyclic deformation and life time behaviour of NiCr22Co12Mo9 at isothermal and thermal-mechanical fatigue (M. Moalla *et al.*). **Damage under Thermal-Mechanical Loading.** Lifetime, cyclic deformation and damage behaviour of MAR-M-247 CC under in-phase, out-of-phase and phase-shift TMF-loadings (T. Beck *et al.*). Thermal fatigue of the nickel base alloy in 625 and the 2? Cr-1Mo steel (R. Ebara, T. Yamada). Low cycle and thermomechanical fatigue of nickel base superalloys for gas turbine application (M. Marchionni). **Crack Growth.** How far have we come in predicting high temperature crack growth and the challenges that remain ahead (A. Saxena). Environmental effects on near-threshold fatigue crack propagation on a Ti6246 alloy at 500°C (C. Sarrazin-Baudoux, J. Petit). Growth behaviour of small surface cracks in inconel

718 superalloy (M. Goto *et al.*).

#### Design and Structures.

Thermomechanical fatigue design of aluminium components (L. Verger *et al.*). Thermomechanical fatigue in the automotive industry (A. Bignonnet, E. Charkaluk). Lifetime prediction on stainless steel components under thermal fatigue load (P.O. Santacreu).

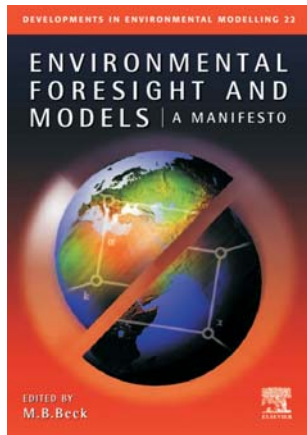
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# Environmental Sciences

## Environmental Foresight and Models

### A Manifesto



Edited by **M.B. Beck**, *Professor and Eminent Scholar, Environmental Informatics and Control Program, University of Georgia, Warnell School of Forest Resources, D.W. Brooks Drive, Athens, GA 30602-2152, USA*

©2002 500 pages  
**ISBN 0-08-044086-X Hardbound**  
**Publication: March 2002**  
**Price: EUR 120 / USD 120**

Developments in Environmental Modelling, Volume 22

*Environmental Foresight and Models: A Manifesto* is the dedicated work of the International Task Force on Forecasting Environmental

Change (1993-1998). It discusses the immense challenges that structural change presents - that is, the possibility that the behaviour of the environment may come to be radically different from that observed in the past - and investigates the considerable implications for model development. We are faced with the possibility, for example, that the waters of the Atlantic Ocean may cease to circulate in the way that they do now, with profound, but hard-to-predict consequences for Northern Europe. Drawing upon case histories from the Great Lakes, acidic atmospheric deposition and, among others, the ozone problem, this study responds to a new agenda of questions:

- What system of "radar" might we design to detect threats to the environment lying just beyond the "horizon"?
- Are the seeds of structural change identifiable within the observations of the past?
- Is there any evidence in the narrow window of the empirical record to suggest that the system may already be on its way to collapse?
- Could we design models with the express purpose of discovering our ignorance at the earliest possible moment?

Meticulously researched by leading environmental modellers, this milestone volume engages vigorously with its subject and

offers a vital account of how models can begin to take into consideration the significant threats and uncertainties that structural change poses.

**Contents:** Preface.

**Part I** 1. Introduction (M.B. Beck).

2. We have a problem (M.B. Beck). 3. Beginnings of a change of perspective (M.B. Beck). 4. Structural change: A definition (M.B. Beck). 5. The manifesto (M.B. Beck). 6. Epilogue (M.B. Beck).

**Part II** 7. Lake Erie and evolving issues of the quality of its water (W.M. Schertzer, D.C.L. Lam).

8. Impacts of acidic atmospheric deposition on the chemical composition of stream water and soil water (G.M. Hornberger).

9. The ozone problem (R.L. Dennis).

**Part III** 10. Belief networks: Generating the feared dislocations (O. Varis). 11. Random search and the reachability of target futures (M.B. Beck, J. Chen, O.O. Osidele). 12. Uncertainty and the detection of structural change in models of environmental systems (K.J. Beven). 13. Simplicity out of complexity (P.C. Young, S. Parkinson, M. Lees).

14. Structural effects of landscape and land use in streamflow response (T.S. Kokkonen, A.J. Jakeman). 15. Elasto-plastic deformation of structure (M.B. Beck, J.D. Stigter, D. Lloyd Smith). 16. Detecting and forecasting growth in the seeds of change (J. Chen, M.B. Beck). 17. Probing the shores of

ignorance (R.L. Dennis, J.R. Arnold, G.S. Tonnesen).

**Part IV 18.** Parametric change as the agent of control (K.J. Keesman).  
19. Identifying the inclination of a system towards a terminal state from current observations (A.V. Kryazhinskii, M.B. Beck).  
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### Modern Scientific Tools in Bioprocessing

Edited by **P. Wilderer**, *Technische Universität München, Am Coulombwall, D-85748 Garching, Germany*

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Developments in Water Science, Volume 49

In recent years, a great variety of novel analytical methods has been developed to analyze composition, architecture and physico-chemical properties of microbial aggregates such as activated sludge flocs and biofilms. Simultaneously, new modeling approaches, aided by improved numerical simulation of the structure and function of these aggregates, have furthered our ability to understand their

development and internal organization. The application of these novel analytical tools has led to fascinating discoveries, but at the same time has created a great deal of confusion in the engineering community. This volume is intended to bridge the gap that has emerged between science and engineering in the field of advanced biological wastewater treatment. Information is provided about methods which became available in recent years, both in microbiology and computer based modeling and simulation. Various authors elucidate the essence of the newly developed methods, the potentials these methods have in gaining better understanding of complex microbial systems, and the advantages which are envisioned with respect to optimization of biological wastewater treatment plants, trouble shooting and innovation.

**Contents:** Editorial (P. Wilderer, S. Wuertz). Modern scientific methods and their potential in wastewater science and technology (P.A. Wilderer, *et al.*). Microbiological aspects of a bioreactor with submerged membranes for aerobic treatment of municipal wastewater (R. Witzig, *et al.*). Characterization of denitrifying phosphate-accumulating organisms cultivated under different electron acceptor conditions using polymerase chain reaction-denaturing gradient gel electrophoresis assay (J. Ahn, T. Daidou, S. Tsuneda, A. Hirata). Performance of a bioreactor with submerged membranes for aerobic treatment of municipal waste water (S. Rosenberger, *et al.*). Enumeration of acetate-consuming

bacteria by microautoradiography under oxygen and nitrate respiring conditions in activated sludge (J.L. Nielsen, P.H. Nielsen). Microbial community analysis of thermophilic contact oxidation process by using ribosomal RNA approaches and the quinone profile method (F. Kurisu, H. Satoh, M. Mino, T. Matsuo). Active biomass in activated sludge mixed liquor (G.L. Cronje, A.O. Beeharry, M.C. Wentzel, G.A. Ekama). Role of filamentous microorganisms in activated sludge foaming: relationship of mycolata levels to foaming initiation and stability (F.L. de los Reyes III, L. Raskin). Assessment of activated sludge viability with flow cytometry (G. Ziglio, *et al.*). Nitrifying and heterotrophic population dynamics in biofilm reactors: effects of hydraulic retention time and the presence of organic carbon (R. Nogueira, *et al.*). Sludge population optimisation: a new dimension for the control of biological wastewater treatment systems (Zhiguo Yuan, L.L. Blackall). Population changes in a biofilm reactor for phosphorus removal as evidenced by the use of FISH (C.M. Falkentoft, *et al.*). Simultaneous P and N removal in a sequencing batch biofilm reactor: insights from reactor-and microscale investigations (A. Gieseke, P. Amz, R. Amann, A. Schramm).

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# Life Sciences

## Biotechnology Organizations in Action

### Turning Knowledge into Business

By: **J. Norus**, *Associate Professor, Department of Organization and Industrial Sociology, Copenhagen Business School, Solbjerg Plads 3, DK-2000 Frederiksberg, Denmark*

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Price: EUR 99 / USD 99

Progress in Biotechnology,  
Volume 20

This volume analyzes the dynamics and interactive processes among the players (individuals, institutions, and organizations/firms) that have constituted and legitimized the development of the biotechnology industries. The unit of analysis is small entrepreneurial firms developing biotechnological products and processes. What types of strategies are small entrepreneurs pursuing in order to create markets for their new products and processes, and how have specific strategies emerged? The primary interest is the network process through which the technological field and the development of institutions and

routines evolve and co-evolve. The theoretical contribution of the book is its focus on the development of the concept of networks. From being regarded as a relative static concept the book transforms the concept into a dynamic concept of networking. The dynamic view on the creation and development of new technologies through network formations is linked to the concept of strategy that is used throughout the book. Hence the strategies are developed along with the creation of technological knowledge, and it is hoped that the diffusion of this specific knowledge will bring new actors into the technological arena or community.

This book will be useful to the academic community, those studying the formation of networks, strategic management, organizational behavior, and management of technology, as well as business observers with a specific interest in the evolution of the biotechnology industry.

**Contents:** Preface.

**Part 1 Introduction.** 1. From life sciences to organization sociology. 1.0 What the book is not about! 1.1 An overview of the studies on the biotechnology industry. 1.2 The constitution of a new technological field. 1.3 The research method. 1.4 Outline of the book. 2. The history of the biotechnology industry. 2.0 Introduction. 2.1 The conceptual struggle. 2.2 The research field of biological engineering - an

enabling technology. 2.3 The industrial application of new biotechnologies. 2.4 The development of competencies - cross-fertilizing of processes and techniques. 2.5 Network formation and resource dependency. **Part II Construction** 3. The biotechnology community. 3.0 Introduction. 3.1 The theoretical aspects of the systems approach. 3.2 The biotechnology community - introduction of the actors. 3.3 Strategies among biotechnology firms. 3.4 The role of universities - from knowledge generators to profit makers. 3.5 Technology parks - incubators of biotechnology. 3.6 Public regulatory bodies - a balance between restriction, approval and promotion. 3.7 Venture capital - the noble art of balancing between altruism and cannibalism. 3.8 Pharmaceutical and chemical firms - the late adopters. 3.9 Summary. **Part III Reconstruction.** 4. Theoretical aspects of strategies and networks. 4.0 An organizational perspective on strategies and networks - shifting the level of analysis. 4.1 The organization of technological search and learning. 4.2 The internal organization - dominating coalitions and the formation of routines. 4.3 Firms in networks - the external relations. 4.4 Networking activities - types and backgrounds. 4.5 Strategic behavior and the formation of networks - a summary. 5. The co-evolution of strategies and networks - designing the case

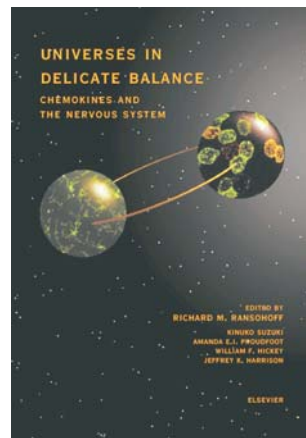
studies. 5.0 Introduction. 5.1 The parallel and intertwined processes of network formation. 5.2 Designing the case studies of the three types of strategies. 5.3 The conceptualization of the empirical field. 5.4 On the track - what next? **Part IV Reconstruction.** 6. The project strategy. 6.0 Introduction. 6.1 The history of the firm. 6.2 Phase I: Kem-En-Tec 1983-1993. 6.3 Phase II Establishing subsidiaries. 6.4 The future of Kem-En-Tec - the problem of the project strategy. 6.5 The new future of an experimenting firm - the 2001 update. 6.6 Conclusion - the project strategy a question of "exits". 7. The incremental strategy. 7.0 Introduction. 7.1 AndCare, Inc. 7.2 ThermoGen Inc. 7.3 Conclusion on the incremental strategy. 8. The vertical integration strategy. 8.0 Introduction. 8.1 Calgene, Inc. 8.2 Incyte Genomics, Inc. 8.3 Conclusion of the vertical integration strategy. **Part V Conclusion.** 9. The role of the biotechnological industries. 9.0 Introduction. 9.1 From industrial sociology to organizational sociology. 9.2 Strategy and networks - a mating dance. 9.3 The entrepreneurial strategies revisited. 9.4 The managerial aspects of the network processes. 9.5 The neo-schumpeterian strategies. 10. The constitution of technological fields. 10.0 The theoretical ambition of the study revisited. 10.1 The embeddedness of routines, communities of practice, and technological systems. 10.2 The role of organizational routines. 10.3 The role of communities of practice. 10.4 The role of technological systems. 10.5 Four

entrepreneurial abilities in the constitution of technological fields. References. List of interviews.

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### Universes in Delicate Balance: Chemokines and the Nervous System



Edited by **R.M. Ransohoff**, *Cleveland Clinic Foundation, The Lerner Research Institute, Mellen Center for MS Treatment and Research, 9500 Euclid Avenue, Cleveland, OH 44195, USA*, **J.K. Harrison**, *University of Florida, College of Medicine, Box 100267, Gainesville, FL 32610-0267, USA*, **W.F. Hickey**, *Dartmouth-Hitchcock Medical Center, Department of Pathology, One Medical Center Drive, Lebanon, NH 03756-0001, USA*, **K. Suzuki**, *University of North Carolina, Pathology & Lab Medicine, 410 Brinkhous Bullitt Bldg, Chapel Hill, NC 27599, USA*, **A.E.I. Proudfoot**, *Serono*

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It is commonly acknowledged that the nervous system and the immune system, those most complex of networks, share attributes beyond their intricacy. Elements common to the two systems include memory, connectivity, flexibility and developmental selection of cellular composition by a rigorous process involving widespread programmed cell death. There is one salient difference: the cells of the immune system are predominantly in constant motion, while post-mitotic neurons and glia are largely fixed in place. Therefore, chemokines, initially characterized as leukocyte chemoattractants, have for the last one and one-half decades been intensely and productively studied in the contexts of inflammation, immunity and hematopoietic development. Only recently have the two fields, neurobiology and immunology, displayed mutual interests in chemokines. This convergence of the two tribes of investigators was catalyzed by the finding that SDF-1 (now known as CXCL12) and its receptor, CXCR4, exerted significant and similar functions in development of both nervous and immune systems. Indeed CXCL12 and CXCR4 were required, in an uncannily similar fashion, for retention of pre-B lymphocytes at sites of maturation in the bone marrow and of neuronal progenitors in the external granule

cell layer of the developing cerebellum. Recent reports indicate that chemoattraction of cerebellar granule cells through CXCR4 can be suppressed by reverse signaling initiated by binding of soluble eph receptors to transmembrane ephrin B, thereby establishing a link between chemokine action and a cardinal patterning system of the developing nervous system. As may be anticipated when a dam breaks, a massive influx of correlative observations in the nervous and immune systems is likely to ensue. This volume represents the state of current knowledge. To this end, introductory material for both systems is provided. Basic and advanced 'chemokiology' are presented. The recipe for making a nervous system (both ingredients and instructions for preparation) is described, as are the roles of chemokines and their receptors in making an immune system. Given their importance and complexity, CXCL12/CXCR4 interactions are separately treated in varying contexts.

The field of 'neurobiology of chemokines' has not lain fallow during the last ten years. During much of this time the principal focus has been on neuroinflammation. Linking the immune and nervous systems are explanations of the functions of chemokines and their receptors for resident brain macrophages, the microglia, the unique cerebrovascular endothelium and angiogenesis. Understanding human disease is the goal of much of this research. New discoveries are being made and reported at a gratifying rate. It is expected that this volume will promote the steady production

and application of useful new knowledge in this developing field. It provides a unique single-source database for basic neurobiology highlighting the fundamental aspects of chemokines and discussing the relations of chemokine science to animal models and human disease.

**Contents:** Preface. 1. The nervous system (K. Suzuki). 1.1 Cellular elements, tissue organization, organogenesis (J. Dupree). 1.2 Cellular reactions to insult (K. Suzuki). 1.3 Patterns of tissue pathology in neurological diseases (K. Suzuki). 2. The chemokine system (A.E.I. Proudfoot). 2.1 The biology of chemokines (B. Rollins). 2.2 Chemokines (A.E.I. Proudfoot, J.P. Shaw, C.A. Power, T.N.C. Wells). 2.3 Chemokine receptors (D. Slattery, N. Gerard, C. Gerard). 2.4 Chemokine receptor signal transduction (K. Bacon). 2.5 Development and function of the hemato-lymphopoietic system (G.N. Schwartz, J.M. Farber). 2.6 CXC chemokines in angiogenesis (R.M. Strieter, J.A. Belperio, D.A. Arenberg, M.I. Smith, M.D. Burdick, M.P. Keane). 3. Chemokines and neural inflammation in model systems (W.F. Hickey). 3.1 Expression, functions and interactions of chemokines in CNS trauma (V.W. Yong). 3.2 Animal models of multiple sclerosis (W.J. Karpus). 3.3 Chemokines and neonatal excitotoxic brain injury (J.M. Galasso, F. Silverstein). 3.4 Stroke: chemokine-induced infiltration of immune cells (H.W.G.M. Boddeke). 3.5 Chemokine responses in virus-induced neurologic disease: balancing host defence and neuropathology (T.E. Lane,

M.J. Buchmeier). 3.6 Cell recruitment in the axotomized facial nucleus: role of cytokines, chemokines and cell adhesion molecules (G. Raivich). 3.7 Chemokines and neural inflammation in experimental brain abscesses (T. Kielian, W.F. Hickey). 3.8 Insights from transgenic and knockout mice (I.L. Campbell, V.C. Asensio). 4. Chemokines effects on other CNS processes and resident cells (J.K. Harrison). 4.1 Constitutive roles for SDF-1/ CXCR4 and fractalkine/CX3CR1 in the CNS (J.K. Harrison). 4.2 The role of the chemokine GRO-1 in the development of vertebrate CNS glial cells (R.H. Miller, S. Robinson). 4.3 Chemokine interactions with astrocytes (M.E. Dorf, F.R. Fischer, M.A. Berman, Y. Luo). 4.4 Why do neurons express chemokine receptors? (R.J. Miller, S.B. Oh). 4.5 Microglial chemokines and chemokine receptors (K. Biber). 4.6 Chemokines and chemokine receptors along the brain microvasculature (A.V. Andjelkovic, J.S. Pachter). 5. Chemokines and neurological diseases (R. Ransohoff). 5.1 Chemokines and chemokine receptors in multiple sclerosis: a few answers and many more questions (R. Ransohoff, C. Trebst). 5.2 Chemokines in the central nervous system and Alzheimer's Disease (M. Xia, B.T. Hyman). 5.3 HIV-1 associated dementia (D. Gabuzda, J. Wang, P.R. Gorry). 5.4 Infections: meningitis and encephalitis (K.S. Spanaus, A. Fontana). 5.5 Chemokines in the inflamed peripheral nervous system (B.C. Kieseier, H.-P. Hartung).

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# Mathematics

## Almost Free Modules

### Set-theoretic Methods

#### Revised Edition

Edited by **P.C. Eklof**, *Department of Mathematics, University of California, Irvine, CA 92697-3875 USA*, **A.H. Mekler**<sup>†</sup>

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**ISBN 0-444-50492-3 Hardbound**  
**Publication: April 2002**  
**Price: EUR 150 / USD 150**

North-Holland Mathematical Library, Volume 65

This book provides a comprehensive exposition of the use of set-theoretic methods in abelian group theory, module theory, and homological algebra, including applications to Whitehead's Problem, the structure of Ext and the existence of almost-free modules over non-perfect rings. This second edition is completely revised and updated to include major developments in the decade since the first edition. Among these are applications to cotorsion theories and covers, including a proof of the Flat Cover Conjecture, as well as the use of Shelah's pcf theory to construct almost free groups. As with the first edition, the book is largely self-contained, and designed to be accessible to both

graduate students and researchers in both algebra and logic. They will find there an introduction to powerful techniques which they may find useful in their own work.

#### AUDIENCE

University Mathematical Libraries, Mathematics Departments and Research Institutes.

#### Contents: I. ALGEBRAIC PRELIMINARIES

1. Homomorphisms and extensions.
2. Direct sums and products.
3. Linear topologies.

#### II. SET THEORY

1. Ordinary set theory.
2. Filters and large cardinals.
3. Ultraproducts.
4. Clubs and stationary sets.
5. Games and trees.
6.  $\Delta$ -systems and partitions.

#### III. SLENDER MODULES

1. Introduction to slenderness.
2. Examples of slender modules and rings.
3. The Los-Eda theorem.

#### IV. ALMOST FREE MODULES

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1.  $\kappa$ -free modules.
2.  $\aleph_1$ -free abelian groups.
3. Compactness results.

#### V. PURE INJECTIVE MODULES

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2. Cotorsion groups.

#### VI. MORE SET THEORY

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2. Models of set theory.
3.  $\mathcal{L}$ , the constructible universe.
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5. PCF theory and  $I[\lambda]$ .

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1.  $\kappa$ -free modules revisited.
2.  $\kappa$ -free abelian groups.
3. Transversals,  $\lambda$ -systems and NPT.

- 3A. Reshuffling  $\lambda$ -systems.

4. Hereditarily separable groups.

5. NPT and the construction of almost free groups.

#### VIII. $\aleph_1$ -SEPARABLE GROUPS (VI, VII.0,1)

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3.  $\aleph_1$ -separable groups under PFA.

#### IX. QUOTIENTS OF PRODUCTS OF $\mathbb{Z}$ (III, IV, V)

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3. Uncountable products of the integers.
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5. Sheaves of abelian groups.

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3. Baer modules.
  4. The structure of Ext.
  5. The structure of Ext when  $\text{Hom}=0$ .
- XIII. UNIFORMIZATION (XII)
0. Whitehead groups and uniformization.
    1. The basic construction and its applications.
    2. The necessity of uniformization.
    3. The diversity of Whitehead groups.
    4. Monochromatic uniformization and hereditarily separable groups.
- XIV. THE BLACK BOX AND ENDOMORPHISM RINGS(V, VI)
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  3. Endomorphism rings of cotorsion-free groups.
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- XV. SOME CONSTRUCTIONS IN ZFC (VII, VIII, XIV)
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  2.  $\aleph_n$ -separable groups with the Corner pathology.
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- XVI. COTORSION THEORIES, COVERS AND SPLITTERS(IX, XII.1, XIV)
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  2. Cotorsion theories.
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  4. The Black Box and Ext.
- XVII. DUAL GROUPS (IX, XI, XIV)
1. Invariants of dual groups.
  2. Tree groups.
  3. Criteria for being a dual group.
  4. Some non-reflexive groups.
  5. Dual groups in L.

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## Parallel Computational Fluid Dynamics, Practice and Theory

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ParCFD 2001, the thirteenth international conference on Parallel Computational Fluid Dynamics took place in Egmond aan Zee, the Netherlands, from May 21-23, 2001. The specialized, high-level ParCFD conferences are organized yearly on traveling locations all over the world. A strong back-up is given by the central organization located in the USA (<http://www.parcfd.org>). These proceedings of ParCFD 2001 represent 70% of the oral lectures presented at the meeting. All published papers were subjected to a refereeing process, which resulted in a uniformly high quality.

The papers cover not only the traditional areas of the ParCFD conferences, e.g. numerical schemes and algorithms, tools and environments, interdisciplinary topics, industrial applications, but, following local interests, also environmental and medical issues. These proceedings present an up-to-date overview of the state of the art in parallel computational fluid dynamics.

**AUDIENCE**

Industries: Aerospace, automotive, oil and gas, chemical engineering.  
Institutes/Departments: mechanical, fluid mechanics, computational sciences

**Contents: 1. Opening paper**

An overview of ParCFD activities at Delft University of Technology (P. Wilders, B.J. Boersma, J.J. Derksen, A.W. Heemink, B. Niceno, M. Pourquie, C. Vuik).

**2. Invited and contributed papers**

Noise predictions for shear layers (A.V. Alexandrov, B.N. Chetverushkin, T.K. Kozubskaya). Framework for parallel simulations in air pollution modeling with local refinements (A. Antonov). Aerodynamic studies on a Beowulf cluster (K.J. Badcock, M.A. Woodgate, K. Stevenson, B.E. Richards, M. Allan, G.S.L. Goura, R. Menzies). Scalable numerical algorithms for efficient meta-computing of elliptic equations (N. Barberou, M. Garbey, M. Hess, T. Rossi, M. Resh, J. Toivanen, D. Tromeur-Dervout). Direct numerical simulation of jet noise (B.J. Boersma). Migrating from a parallel single block to a parallel multiblock flow solver

(T.P. Bönisch, R. Rühle). Parallel multidimensional residual distribution solver for turbulent flow simulations (D. Caraeni, M. Caraeni, L. Fuchs). Parallel implementation of a line-implicit time-stepping algorithm (L. Carlsson, S. Nilsson). Parallel simulation of dense gas and liquid flows based on the quasi gas dynamic system (B.N. Chetverushkin, N.G. Churbanova, M.A. Trapeznikova). DLB 2.0 A distributed environment tool for supporting balanced execution of multiple parallel jobs on networked computers (Y.P. Chien, J.D. Chen, A. Ecer, H.U. Akay, J. Zhou). Parallel computation of thrust reverser flows for subsonic transport aircraft (C. Chuck, S. Wirogo, D.R. McCarthy). On a fast parallel solver for reaction-diffusion problems: application to air quality simulation (W.E. Fitzgibbon, M. Garbey, F. Dupros). Algebraic coarse grid operators for domain decomposition based preconditioners (L. Formaggia, M. Sala). Efficient parallel simulation of disperse gas-particle flows on cluster computers (Th. Frank, K. Bernert, K. Pachler, H. Schneider). Large scale CFD data handling with off-the-shelf pc-clusters in a VR-based rhinological operation planning system (A. Gemdt, T. van Reimersdahl, T. Kuhlen, C. Bischof). An optimised recoupling strategy for the parallel computation of turbomachinery flows with domain decomposition (P. Giangiaco, V. Michelassi, G. Cerri). Implementation of underexpanded jet problems on multiprocessor systems (I.A. Graur, T.G. Elizarova, T.A. Kudryashova, S.V. Polyakov,

S. Montero). Numerical simulation of scramjet engine inlets on a vector-parallel supercomputer (S. Hasegawa, K. Tani, S. Sato). Parallel computation of multigrid method for overset grid (T. Hashimoto, K. Morinishi, N. Satofuka). Parallel computing of transonic cascade flows using the Lattice-Boltzmann method (A.T. Hsu, C. Sun, C. Wang, A. Ecer, I. Lopez). A weakly overlapping parallel domain decomposition preconditioner for the finite element solution of convection-dominated problems in three dimensions (P.K. Jimack, S.A. Nadeem). Lattice-Boltzmann simulations of inter-phase momentum transfer in gas-solid flows (D. Kandhai, J.J. Derksen, H.E.A. van den Akker). Parallel CFD simulations of multiphase systems: jet into a cylindrical bath and rotary drum on a rectangular bath (M. Khan, C A J. Fletcher, G. Evans, Q. He). Zooming in on 3D magnetized plasmas with grid-adaptive simulations (R. Keppens, M. Nool, J.P. Goedbloed). Parallel calculations for transport equations in a fast neutron reactor (A.V. Kim, S.N. Lebedev, V.N. Pisarev, E.M. Romanova, V.V. Rykovanova, O.V. Stryakhnina). Parallel large scale computations for aerodynamic aircraft design with the German CFD system MEGAFLOW (N. Kroll, Th. Gerhold, S. Melber, R. Heinrich, Th. Schwarz, B. Schöning). Towards stability analysis of three-dimensional ocean circulations on the TERAS (R. Levine, F. Wubs). Code parallelization effort of the flux module of the National Combustion Code (I. Lopez, N-S. Liu, K-H. Chen, E. Yilmaz,

A. Ecer). Parallelization of a chaotic dynamical systems analysis procedure (J.M. McDonough, T. Yang). Performance optimization of GeoFEM fluid analysis code on various computer architectures (K. Minami, H. Okuda). Large scale CFD computations at CEA (G. Meurant, H. Jourden, B. Meltz). Parallel computation of gridless type solver for unsteady flow problems (K. Morinishi). Clusters in the GRID: Power plants for CFD (M.M. Resch). An efficient parallel algorithm for solving unsteady Euler equations (W. Rivera, J. Zhu, D. Huddleston). Parallel Kalman filtering for a shallow water flow model (M. Roest, E. Vollebregt). A parallel solenoidal basis method for incompressible fluid flow problems (S.R. Sambavaram, V. Sarin). A multilevel, parallel, domain decomposition, finite difference Poisson solver (A.W. Schueller, J.M. McDonough). Parallelization of a large scale Kalman filter: comparison between mode and domain decomposition (A.J. Segers, A.W. Heemink). A direct algorithm for the efficient solution of the Poisson equations arising in incompressible flow problems (M. Soria, C.D. Pérez-Segarra, K. Claramunt, C. Lifante). Current status of CFD platform -UPACS- (R. Takaki, M. Makida, K. Yamamoto, T. Yamane, S. Enomoto, H. Yamazaki, T. Iwamiya, T. Nakamura). A symmetry preserving discretization method, allowing coarser grids (A. Twerda, A.E.P. Veldman, G.P. Boerstoel). Multitime multigrid convergence acceleration for periodic problems with future applications to rotor



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simulations (H. van der Ven, O.J. Boelens, B. Oskam). Direct numerical simulation of turbulence on a SGI Origin 3800 (R.W.C.P. Verstappen, R.A. Trompert). Parallel shallow water simulation for operational use (E.A.H. Vollebregt, M.R.T. Roest). Parallel deflated Krylov methods for incompressible flow (C. Vuik, J. Frank, F.J. Vermolen). Parallel CFD applications under DLB environment (E. Yilmaz, A. Ecer). Parallel performance of a CFD code on SMP nodes (M. Yokokawa, Y. Tsuda, M. Saito, K. Suehiro).

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Mathematics



# Medicine

## The Lancet Neurology

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### AUDIENCE

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## Molecular Biology and Immunology in Hepatology

### Advances in the Treatment of Intractable Liver Diseases

Editors: **T. Tsuji, MD, PhD,**  
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*Gastroenterology and Hepatology,*  
*Department of Internal Medicine,*  
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*University, Mainz, Germany*

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This book presents an integration  
 of recent knowledge of virology,  
 molecular biology and  
 immunology focusing on  
 intractable liver diseases. It  
 reports on mechanisms of liver  
 injury e.g. viral hepatitis, fulminant  
 hepatic failure, autoimmune  
 hepatitis, and  
 hepatocarcinogenesis based on  
 the evidence from both clinical  
 and basic research e.g. genetic  
 diversities or transgenic mice  
 models. It also explains current  
 concepts and new strategies to  
 treat alcoholic liver diseases,  
 interferon resistant hepatitis C  
 virus, liver cirrhosis, fulminant  
 hepatic failure, and hepatocellular  
 carcinoma e.g. new drugs,  
 immunotherapy, gene therapy or  
 living related liver transplantation.  
 The authors are all front runners in

current hepatology and give us  
 proper information on each topic.  
 The book will be of interest to all  
 clinicians and basic scientists  
 devoted to hepatology and will be  
 a useful guide to reveal what we  
 can do now and what we should  
 do to treat intractable liver  
 diseases.

### Contents: Preface (T. Tsuji).

### Hepatology in 21<sup>st</sup> century.

General Aspects of Molecular  
 Biology and Immunology for the

Treatment of Intractable Liver

Diseases (K.-H. Meyer zum

Büschenfelde). **Viral Hepatitis.**

The Mechanisms of Liver Injury in

Hepatitis B Virus Infection

(T. Ishikawa, S. Kakumu). Genetic

Diversity and Pathophysiology of

Hepatitis B Virus (H. Yatsuhashi,

M. Yano). Immunopathogenesis of

Hepatitis C (M.J. Koziel). Recent

Advancement in Interferon

Therapy for Hepatitis C Treatment

(J. Feher, G. Lengyel). New

Therapeutic Strategy for Chronic

Hepatitis C (N. Hayashi,

A. Kasahara). Transgenic Mouse

Models for Viral Hepatitis: The

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Hepatocarcinogenesis (K. Koike).

Gene Therapy of Viral Hepatitis

(H.E. Blum). **Liver Cirrhosis.**

Reversibility of Liver Cirrhosis:

Evidence from Clinical and Basic

Research (A. Watanabe).

### Hepatocellular Carcinoma.

Treatment of Hepatocellular

Carcinoma: Diverse Strategies

Based on Underlying Liver

Diseases (M. Omata). Gene

Expression Profiles in



Hepatocellular Carcinoma (S. Kaneko, K. Kobayashi). Gene Therapy for Hepatocellular Carcinoma: Recent Advancements and Problems to Overcome (S. Kuriyama, H. Tsujinoue, T. Nakatani, H. Yoshiji, H. Fukui). Novel Immunological Approach for the Treatment of Hepatocellular Carcinoma (T. Higashi, K. Nouse, M. Uemura, S.J. Nakamura, Y. Kobayashi). **Alcoholic Liver Injury.** Assessment of the Reversibility and Treatments of Alcoholic Liver Disease (J.C. Bode). **Autoimmune Liver Diseases.** Molecular Mechanisms of Autoimmune Hepatitis (A. Vogel, M.P. Manns). Roles of Hepatitis C Virus Infection in Autoimmune Hepatitis (H. Miyakawa). Molecular Mechanisms of T-cell Responses of Autoimmune Hepatitis (M. Zeniya, H. Takahashi, Y. Aizawa, G. Toda). Primary Biliary Cirrhosis: Solving the Enigma (K. Yamamoto, M.E. Gershwin). Induction of T cell Anergy by Peptide Analogue in Primary Biliary Cirrhosis (H. Ishibashi, S. Shimoda, H. Shigematsu, M. Nakamura). Putative Mechanism of Overlap Syndrome: What is the Entity? (S. Onji, K. Yamamoto). **Fulminant Hepatic Failure.** Etiology and Pathophysiology of Fulminant Hepatic Failure (K. Fujiwara, S. Mochida). Cytokines and Fulminant Hepatic Failure (K. Kayano, I. Sakaida, K. Okita). Treatment and Prognosis of Fulminant Hepatic Failure (M. Yoshida). **Living Related Liver Transplantation.** Current Strategy of Living Related Liver Transplantation: Overview (K. Tanaka, S. Kaihara). Viral Cirrhosis and Hepatocellular

Carcinoma in Relation to Living-Donor Liver Transplants (T. Ichida). Subject Index.

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# Neuroscience

## Handbook of Neuropsychology, 2nd Edition

Edited by **F. Boller**, *INSERM, Unite 324, Centre Paul Broca, 75014, Paris, France*, **J. Grafman**, *National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD 20892, USA*

### AUDIENCE

The Handbook is an essential reference source for clinicians such as neuropsychologists, neurologists, psychiatrists, geriatricians and psychologists, as well as for all neuroscientists.

### Volume 7

## The Frontal Lobes

Edited by **J. Grafman**, *Cognitive Neuroscience Section, National Institute of Neurological Disorders and Stroke, Building 10; Room 5C205, 10 Center Drive; MSC 1440, Bethesda, MD 20892-1440, USA*

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Handbook of Neuropsychology, 2nd Edition, Volume 7

Animal research has contributed greatly to our understanding of the special capability of the frontal lobes to respond to a variety of input from "lower order" sensory and posterior association cortex and this and other observations are reported in this volume.

Findings that functions dependent on the frontal lobes emerge late in ontogeny and appear to decline early in normal aging are reviewed and their implications for neuropsychology are discussed. In this volume the concept of working memory is discussed in relationship to both functional neuroimaging and patient studies. Gross distinctions in the functioning of the prefrontal cortex have divided it topographically into dorsolateral and ventromedial sectors. Chapters highlighting the role of the dorsolateral and ventromedial sectors from both neuroimaging and lesion perspectives are also included. Computational modeling has taken center-stage in cognitive neuroscience and its usefulness in testing different theoretical stances about the role of the frontal lobes in information processing is presented.

**Contents:** Preface. List of contributors. 1. Anatomic basis of functional specialization in prefrontal cortices in primates (H. Barbas, H.T. Ghashghaei, N.L. Rempel-Clower, D. Xiao).

2. The prefrontal cortex: conjunction and cognition (E.K. Miller, W.F. Asaad). 3. Working memory: Findings from neuroimaging and patient studies (E.E. Smith, C. Marshuetz, A. Geva). 4. Age, cognition and emotion (L. Phillips, S. McPherson, S. Della Sala). 5. The frontal lobes and frontal-subcortical circuits in neuropsychiatric disorders (S. McPherson, J.L. Cummings). 6. The somatic marker hypothesis and decision-making (A. Bechara, D. Tranel, A.R. Damasio). 7. Neuropsychological consequences of dysfunction in human dorsolateral prefrontal cortex (S.W. Anderson, D. Tranel). 8. The human prefrontal cortex has evolved to represent components of structured event complexes (J. Grafman). 9. The processing of temporal information in the frontal lobe (P. Nichelli). 10. Neural network models of prefrontal cortex and cognitive control (J.D. Cohen). Subject index.

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## Social and Behavioural Sciences

### Advances in Library Administration and Organization

Edited by **E.D. Garten**, *University of Dayton, 300 College Park, OH 45469-1360, USA*

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Advances in Library Administration and Organization, Volume 19

As in previous volumes, this edition of *Advances in Library Administration and Organization* offers timely and interesting articles on topics of interest to library managers from scholars and practitioners working all over the world. It addresses an eclectic mix of topics that adapt theoretical concepts relating to the management of libraries to stretch the boundary of practice. The nine contributions include a definition of knowledge management and an outline of a curriculum designed to train knowledge managers developed in Australia, a case study of the application of change

management at SMU, and a discussion of how ebooks fit into collection management policies. It also includes two pieces on research on the Internet, one that focuses on student use of this tool and the other on the ethical implications of Internet research. Other contributions include a study of how effective managers work and a discussion of quality assessment in libraries and in American higher education. The volume concludes with discussions of consortia that are developing in Ohio and in Taiwan. While each of these articles are quite different in focus, each deals with an issue that we who are charged with leading libraries must address, and each contributes to the discussions that are likely to clarify our visions of where libraries are going and how we might adapt them to meet the future needs of our clientele. As a result, this volume will take its place beside others in the series as a significant contribution to the literature of management within librarianship.

**Contents:** Introduction (D.E. Williams). A rich storehouse for the relief of man's estate? Education for knowledge management (M. Brogan *et al.*). Assessing a change effort in a division of a university library (W.J. Dworaczyk). Ebook collection development and management: the quandary of establishing policies and guidelines for academic library

collections (R. Durbin *et al.*). Internet research ethics and institutional review board policy: new challenges, new opportunities (E.A. Buchanan). Academic library managers at work: relationships, contacts and foci of attention (D. Kingston). Current issues in higher education quality assurance: an introduction for academic library administrators (J. Mulhern). A model to increase the effectiveness of undergraduate internet use: the Hampton University experience (A. Pierce). Undergraduates, institution type, and library use: impact and insight from the Ohiolink experience (K. Schulz). Interlibrary cooperation in the era of electronic library - the Taiwan experience (Hao-Ren Ke). About the contributors. Keyword index.

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### Bilingual Sentence Processing

Edited by **R. Heredia**, *Texas A&M International University, 5201 University Boulevard, Laredo, TX 78041-1900, USA*, **J. Altarriba**, *University at Albany, State University of New York, Social Science 112, Albany 12222, USA*

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Advances in Psychology,  
 Volume 134

*Bilingual Sentence Processing* provides an overview of the literature on bilingual sentence processing from a psycholinguistic and linguistic perspective. The editors have chosen noted researchers in the field of bilingual language processing. Research focuses on both the visual and spoken modalities including specific areas of research interest including an integrated review of methods and the utility of those methods which allows readers to have the appropriate background and context for the chapters that follow. Next, issues surrounding acquisition and pragmatic usage are covered with a focus on code-switching and the actual parsing of sentence material both within and between languages. Third, issues regarding memory, placing language in a broader context, are explored as the connection between language, memory, and perception is reviewed for bilingual speakers. Finally, all of this work has direct implications for educational settings—specifically issues surrounding the assessment of proficiency, the development and nature of dominance, and the acquisition of reading skills and reading comprehension for bilingual speakers.

#### AUDIENCE

For both the novice and the experienced researcher in the

fields of cognitive science, artificial intelligence, communication and information processing, psycholinguistics and linguists.

#### Contents: Acknowledgements.

Preface (G.B. Simpson).

Introduction and Overview

(J. Altarriba, R.R. Heredia).

#### Methods in Bilingual Research.

On-line methods in bilingual

spoken language research

(R.R. Heredia, M.T. Stewart).

#### Connectionist Models of Second Language Processing and Bilingualism.

Extending the competition model (B. MacWhinney).

A self-organizing connectionist

model of bilingual processing

(Ping Li, I. Farkas).

#### Memory Representation in Sentence

Processing. Cross-language

facilitation, semantic blindness,

and the relation between language

and memory: replications of

Altarriba and Soltano (1996) and

support for a new theory

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sentence contexts in reading,

memory, and semantic

disambiguation (J. Altarriba,

J.L. Gianico). Exploring language

asymmetries in early

Spanish-English bilinguals: the role

of lexical and sentential context

effects (A.E. Hernández). Text

comprehension in bilinguals:

integrating perspectives on

language representation and text

processing (G.E. Raney *et al.*).

#### Psycholinguistic Theory and

Research. Relative clause

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An on-line look at sentence

processing in the second

language (C. Frenck-Mestre).

Cross-linguistic aspects of

anaphor resolution (D. Hillert).

#### Figurative Language Processing.

Lexical access of phrasal verbs

and verb-prepositions by

monolinguals and bilinguals

(T. Matlock, R.R. Heredia). What

native and non-native speakers'

images for idioms tell us about

figurative language (H. Bortfeld).

#### Language Skill Development in

Bilingual Children. The interaction

between vocabulary knowledge

and reading comprehension

(A.Y. Durgunoglu *et al.*). The

relationships among language

proficiency, content, and syntax in

bilingual written language

production (W.S. Francis). Code

switching in preschool bilingual

children (Z. Peynircioglu,

A.Y. Durgunoglu). Authors'

information. Author index. Subject

index.

#### NORTH-HOLLAND

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#### The Environmental State Under Pressure

Edited by **A.P.J. Mol**, *Department of Social Sciences, Wageningen University, Hollandseweg 1, The Netherlands*

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**F.H. Buttel**, *Department of Rural Sociology, University of Wisconsin, Madison, WI 53706, USA*

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Research in Social Problems and Public Policy, Volume 10

For a long time in industrialized countries the state occupied a comfortable and unquestioned position in dealing with environmental problems. Since the 1960s we have witnessed the rather smooth institutionalization of environmental tasks in state policies and politics, leading to the emergence of the 'environmental state.' In the 1980s, the ideologies of deregulation and privatization formed the start of the debate on the environmental state and the 1990s left the debate facing new challenges.

First, the debate became broader and more sophisticated, moving away from simple deregulation and privatization arguments and toward the issue of political modernization and reinventing government. Second, in addition to the ongoing debate on the environmental state within national boundaries, the processes of and political debates on globalization led to new challenges in the viability of the (nationally ordered) environmental-regulatory state. Third, the debate widened geographically, from Europe and the North American continent to the central and East-European countries undergoing transition away from centrally planned economies with all-dominating states, and to states in the so-called South.

Various analytical frameworks and social theories are now being applied to understanding and evaluating the nature of these social processes, transformations and continuities related to the environmental state. The

*Environmental State Under Pressure* provides a thorough examination of these issues with particular emphasis on the treadmill-of- production and the ecological modernization perspectives. The volume draws upon case studies and evidence from environmental states in the North American continent, Western Europe, Africa, Southeast and East Asia and Central and Eastern Europe.

**Contents:** The environmental state under pressure: an introduction (A.P.J. Mol, F.H. Buttel). **Conceptualizing and Theorizing the Environmental State.** The treadmill of production and the environmental state (A. Schnaiberg *et al.*). Ecological modernization and the environmental state (A.P.J. Mol, G. Spaargaren). From the treadmill of production to ecological modernization? Applying a Habermasian framework to society-environment relationships (D.R. Fisher). **North American and European Environmental States.** State policies to improve air quality (A. Mazur, E.W. Welch). Environmental governmentality as a basis for regulatory reform. The adaptation of new policy instruments in Finland (R. Sarinen). The European Union as a suprabate in agri-environmental issues. The Finnish perspective (P. Jokinen). Environmental discourse and the state. A social analysis of debates on transport and environment in Portugal and The Netherlands (C.S.A. Van Koppen). **Environmental States and Development Processes in the South.** The environmental state and the forest; of lookouts, lumberjacks, leopards, and losers

(B. Ambrose-Oji *et al.*). The global in the local: the environmental state and the management of the Nile Perch Fishery on Lake Victoria (D. Wilson). **Comparative Perspectives on Transitional Post-Socialist Environmental States.** Deforestation, floods, and state reactions in China and Thailand (G. Lang). Motivating a conflicted environmental state: community-driven regulation in Vietnam (D. O'Rourke). The environmental state in constant transition: decentralization and economization in Russia (O. Aksenova, V. Nedelkov).

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## From Words to Discourse

### Trends in Spanish Semantics and Pragmatics

Edited by **J. Gutiérrez-Rexach**, *Ohio State University, Columbus, OH 43210-1229, USA*  
E-mail: [gutierrez-rexach.l@osu.edu](mailto:gutierrez-rexach.l@osu.edu)

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Current Research in the Semantics/Pragmatics Interface, Volume 10

An area of linguistic research can be considered mature when the validity of theoretical and empirical results is tested cross-linguistically and when

predictions from different languages influence and modify the course of theoretical development. The semantics/pragmatics interface poses a special challenge in this respect because of its interdisciplinary and multi-theoretical nature. This volume attempts to bridge the gap between theory and empirical analysis by focussing on several aspects of the semantics and the pragmatics of Spanish from a variety of theoretical points of view. Some of the papers were selected from those presented at the International Conference "Semantics and Pragmatics of Spanish" (Ohio State University, 1999). Others are invited contributions from leading scholars in the field. Among the topics covered are several that have been the subject of intense debate, whereas others represent subtle data patterns not considered so far. The topics include the proper characterization of tense and aspect, the subjunctive, verbal periphrases, stage/individual level predication, the interpretation of infinitives in embedded and adjunct clauses, the subjunctive mood, demonstratives, quantification of excess, exception phrases, binding phenomena, propositional negative polarity items, particles of politeness, and pronominal doubling. Overall, the analysis of these subjects contributes new findings to prominent theories in the field, such as possible world semantics, relevance theory, mental spaces, type coercion, generalized quantifier theory, dynamic semantics, and the theory of Logical Form.

#### AUDIENCE

For researchers, students and scholars in the following disciplines: general linguistics (especially those interested in semantics, pragmatics, and the syntax/semantics interface), romance linguistics, Hispanic linguistics, cognitive science, philosophy.

**Contents:** Introduction (J. Gutiérrez-Rexach). Spanish past and future tenses: less (semantics) is more (S. Gennari). Tensed complements of perception verbs: issues in their temporal interpretation (A. Cipria). Spanish 'aspectual' periphrases: ordering constraints and the distinction between situation and viewpoint aspect (B. Laca). Non-declarative sentences in Spanish: the case of the infinitive (X.R. Sequeiros). Aspect and situations: a situation semantics account of the semantic variability of Spanish 'al-clauses' (L. Alonoso-Ovalle). Mental spaces and epistemic attitudes: on the Spanish subjunctive/indicative alternation (F. Aliaga, E. de Bustos). Space accessibility and the pragmatic status of propositions (E. Mejías-Bikandi). Coercion and the stage/individual distinction (V. Escandell-Vidal, M. Leonetti). Some Spanish quantifier modifiers (R. Zuber). Demonstratives in context (J. Gutiérrez-Rexach). Propositional NPIs and the scalar nature of polarity (J. Gutiérrez-Rexach, S. Schwenter). Degree quantification and modal operators in Spanish (I. Bosque). The shifted reading of the Spanish simple past as dependent on presupposition accommodation (R.J. García Córdoba). On the

interaction of syntax-semantics-pragmatics: a case study (J. Macià). Clitic doubling, null objects and clitic climbing in the Spanish of Corrientes (L. Colantoni). Spanish *no, sí*: a particle of politeness (R. Vann *et al.*). Name index. Subject index.

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### In Perpetual Motion

#### Travel Behavior Research Opportunities and Application Challenges

Edited by **H.S. Mahmassani**,  
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Travel behavior interacts in a deep way with how we work and play. Social, intellectual, economic and technological forces continually influence the spatial and temporal activity patterns of individuals and businesses. Developments in the production, dissemination, and consumption of information have important implications for how we use our time, and how we pursue the various work, sustenance and leisure activities of our daily existence.

This book provides an authoritative assessment of the

state-of-the-art in travel behavior research and applications, and identifies the principal emerging trends, challenges and opportunities in this important area of transportation research. It is an outgrowth of the "Austin Meeting" of the International Association for Travel Behavior Research, a milestone event in defining cutting-edge problems and developments in this area. It provides both an entry point and a foundation for future developments likely to take place over the next decade. Key features of this volume include: state-of-the-art assessments of key areas of travel behavior research and policy applications, written by the leading international researchers in these areas; unique to this volume; the last two publications of the late Eric Pas, a critical thinker and contributor to the field, including a milestone contribution to Time Use and Travel Behavior; charting of new territory for the travel behavior community in the areas of intelligent-transportation systems, telecommunications-travel interactions, land use-travel interactions and the application of microsimulation techniques for dynamic analysis of travel choices in networks; the single most concentrated gathering of the field's most significant and influential scholars of the past two decades, and those who are leading the field into the new century; and finally, the unique interplay between disciplines; between theory, methodology and timely policy applications in transport and the environment; between advanced technologies and societal values; between

quantitative rigor, qualitative insight, and practical impact.

#### AUDIENCE

For researchers, academics, students, research centre staff, government agency personnel engaged in research and practice of travel behaviour, demand forecasting, transportation planning and operation, marketing of transportation and other infrastructure services. Also for professionals in consulting and government who are concerned with evaluating policies that impact upon transportation systems.

**Contents:** Acknowledgements. Foreword (H.S. Mahmassani).

#### Response to New Transport Alternatives and Policies.

Setting the research agenda: response to new transport alternatives and policies (P. Jones). Living models for continuous planning (A. Daly). Household adaptations to new personal transport options: constraints and opportunities in household activity spaces (K.S. Kurani, T.S. Turrentine). Responses to new transportation alternatives and policies: workshop report (M.E.H. Lee-Gosselin).

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### International Perspectives on Child & Adolescent Mental Health

*Selected Proceedings of the  
Second International Conference  
on Child & Adolescent Mental  
Health, Kuala Lumpur, June 2000*

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The papers included in this volume highlight research and practice in child and adolescent mental health from around the world.

As systems of care are different across countries and cultures, it is imperative that knowledge is shared and lessons learned. The biennial Elsevier conference on Child and Adolescent Mental Health is designed to provide a forum for mental health and educational experts from various disciplines and countries.

This volume presents a selection of papers presented at the Second International Conference on Child and Adolescent Mental Health, held in Kuala Lumpur in June 2000. The conference brought together experts from 28 countries to discuss and evaluate the current status of knowledge and developments in the field and the various treatments being offered to children and adolescents with mental health needs. **AUDIENCE**

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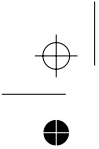
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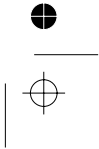
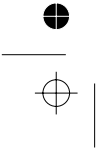
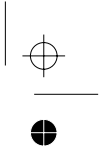
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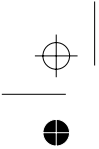
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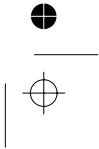
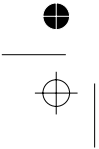
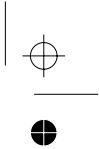
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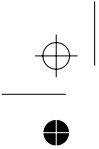
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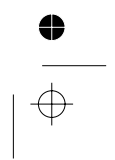
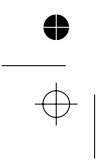
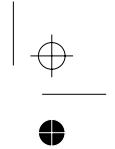
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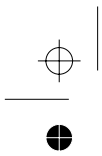
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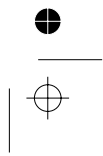
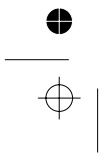
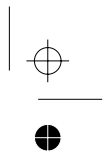


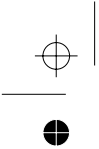
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