

Oral Program

Tuesday, 2nd June 2015
--

17:00-18:00	Registration Room: ML Building/Turbine Hall
--------------------	--

Wednesday, 3rd June 2015
--

07:30-08:45	Registration Room: ML Building/Turbine Hall
--------------------	--

Room	Audi Max
-------------	-----------------

08:45-09:00	Welcome Address by Conference Chair Rémi Abgrall , University of Zurich, Switzerland
-------------	--

09:00-10:00	[K01] Direct numerical simulation of turbulent combustion - Fundamental understanding towards predictive models Jackie Chen , Sandia National Laboratories, USA Session Chair: R. Abgrall
-------------	---

10:00-10:30	Refreshment Break Room: ML Building/Turbine Hall
--------------------	---

Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
--------------	---------------------------	---------------------------	---------------------------	---------------------------

10:30-12:30	Title: Methods & Algorithms Session Chair: P. Jenny	Title: HPC Session Chair: P. Ricoux	Title: Uncertainty Quantification Session Chair: P. Congedo	Title: Symposium Session Chair: M. Ricchiuto
--------------------	---	---	---	--

10:30-11:00	[O1.01] Multilevel Monte Carlo for two phase flow and transport in a subsurface reservoir with random permeability F. Müller, P. Jenny*, D. Meyer ETH, Switzerland	[O2.08] Hybrid iterative MapReduce MPI framework based on Hadoop platform to solve oil extraction problems M. Mansurova, D. Akhmed-Zaki, B. Matkerim*, A. Shomanov Al-Farabi Kazakh National University, Kazakhstan	[O3.01] Uncertainty quantification approach based on a non-stationary Kriging surrogate model K. Shimoyama* ¹ , S. Kawai ¹ ¹ Tohoku University, Japan, ² Japan Aerospace Exploration Agency, Japan	[SYM01] Uncertain hydrodynamic loads on offshore wind turbines by spectral methods A.P. Engsig-Karup* ¹ , C. Eskilsson ² , D. Bigoni ¹ ¹ Technical University of Denmark, Denmark, ² Chalmers University of Technology, Sweden
-------------	---	--	---	--

11:00-11:30	[O1.02] A finite-element method for the full viscoresistive magnetohydrodynamic equations, application to tokamak plasma dynamics W.J. Haverkort ¹ , G. Huijsmans ² , H.J. de Blank ³ , B. Koren* ⁴ ¹ Shell Technology Centre Amsterdam, The Netherlands, ² ITER Organization, France, ³ Dutch Institute for Fundamental Energy Research, The Netherlands, ⁴ Eindhoven University of	[O2.02] OpenSource based CFD-suite for energy-converting machines and corresponding applications L. Mangani*, G. Romanelli, E. Casartelli Hochschule Luzern, Switzerland	[O3.02] UQLab, a software framework for uncertainty quantification S. Marelli*, B. Sudret ETH Zurich, Switzerland	[SYM02] Promising developments in efficient, highly-nonlinear analysis of wave energy converters H.B. Bingham ¹ , A.P. Engsig-Karup* ¹ , S. Kontos ¹ , O. Lindberg ² ¹ Technical University of Denmark, Denmark, ² FORCE Technology A/S 2800 Lyngby, Denmark [SYM03] Application of fast numerical wave tank to modelling wave energy converters J.C. Harris* ¹ , E. Dombre ^{1,2} , M.
-------------	---	---	--	--

	<i>Technology, The Netherlands</i>				Benoit ^{1,2} , S.T. Grilli ³ ¹ Universite Paris-Est (EDF R&D, ENPC, Cerema), France, ² EDF R&D LNHE, France, ³ University of Rhode Island, USA
11:30-12:00	[O1.03] Application of discontinuous galerkin method for the simulation of turbulent flow in propulsion systems V. Couaillier*, M. de la Llave Plata, F. Renac, E. Martin, J.B. Chapelier <i>ONERA, France</i>	[O2.03] From MATLAB to supercomputing: The MATLAB HPC-compiler S. Omlin*, L. Räss, Y. Podladchikov <i>University of Lausanne, Switzerland</i>	[O3.03] Uncertainty assessment of cavitating models with real-gas and turbulence effects R. Abgrall ¹ , P.M. Congedo ² , E. Goncalves ³ , M.G. Rodio* ² ¹ University of Zurich, Switzerland, ² INRIA Bordeaux Sud-Ouest, France, ³ ENSMA, France		[SYM04] SPH for wave structure interaction P.K. Stansby*, B.D. Rogers, S.J. Lind <i>University of Manchester, UK</i>
12:00-12:30		[O2.04] An advanced computational framework for modelling offshore renewable-energy devices J.D. Brandsen* ¹ , A. Viré ¹ , C.C. Pain ¹ ¹ Delft University of Technology, The Netherlands, ² Imperial College London, UK	[O3.04] Information-theoretic model reduction of stochastic permeable media transport S. Mitran <i>University of North Carolina, USA</i>		[SYM05] Mooring cable dynamics for wave energy applications using discontinuous hp-adaptive finite elements J. Palm* ¹ , C. Eskilsson ¹ ¹ Dep. Shipping and Marine Technology, Sweden, ² Chalmers University of Technology, Sweden
					[SYM06] Spectral/hp element modeling of floating bodies in a Boussinesq framework A.P. Engsig-Karup ¹ , C. Eskilsson ¹ , M. Ricchiuto* ¹ ¹ Technical University of Denmark, Denmark, ² Chalmers University of Technology, Denmark, ³ INRIA Bordeaux-Sud-Ouest, Denmark
12:30-13:30	Lunch & Poster viewing Room: ML Building/Turbine Hall & ML Building/Floor F				
Room	ML Building/ML D28				
13:30-14:30	[K02] TBC Michael Grätzel, Federal Institute of Technology of Lausanne, Switzerland Session Chair: R. Teysier				
14:30-15:30	[K03] Modelling dielectric response function and non-equilibrium charge transfer of atomistic and continuous media M.H. Müser, Jülich Supercomputing Centre, Germany Session Chair: N. Adams				
15:30-15:45	Refreshment Break Room: ML Building/Turbine Hall				
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39	
15:45-18:15	Title: Methods & Algorithms Session Chair: P. Jenny	Title: HPC Session Chair: D. Kothe	Title: Uncertainty Quantification Session Chair: E. Chetzi	Title: Kinetic Schemes Session Chair: R. Teysier	

15:45-16:15	<p>[O1.04] A family of methods for DFN flow simulations with non-conforming meshes M.F. Benedetto¹, S. Berrone*¹, C. Fidelibus², S. Pieraccini¹, S. Scialo¹, F. Vicini¹ ¹Politecnico di Torino, Italy, ²Politecnico di Bari, Italy</p>	<p>[O2.05] Implementing delta-tracking in a GPU-accelerated Monte Carlo neutron transport code K.L. Rowland*¹, R.M. Bergmann², R.N. Slaybaugh¹, J.L. Vujic¹ ¹University of California, Berkeley, USA, ²Paul Scherrer Institute, Switzerland</p>	<p>[O3.05] Accurate prediction of Organic Rankine Cycles performances integrating local high-fidelity turbines simulation and uncertainties P.M. Congedo*¹, D. De Santis¹, R. Abgrall² ¹INRIA Bordeaux Sud-Ouest, France, ²University of Zurich, Switzerland</p>	<p>[O4.01] Hybrid Fokker-Planck-DSMC method for gas flow simulations in the whole Knudsen number range H. Gorji, S. Küchlin*, P. Jenny ETH Zürich, Switzerland</p>
16:15-16:45	<p>[O1.05] Eulerian modelling through the kinetic based moment method for large eddy simulation of fuel spray M. Sabat*^{1,2}, A. Larat^{1,4}, A. Vié³, M. Massot^{1,4} ¹Laboratoire d'Energétique Moléculaire et Macroscopique, Combustion, France, ²Ecole Centrale Paris, France, ³Stanford University, USA, ⁴Fédération de Mathématiques de l'Ecole Centrale Paris, France</p>	<p>[O2.06] Use of GPU HPC to resolve nonlinear waves in poromechanics L. Räss*^{1,2}, S. Omlin¹, N. Simon², Y. Podladchikov¹ ¹University of Lausanne, Switzerland, ²Institute of Energy Technology, Norway</p>	<p>[O3.06] A direct method for the analysis of multidimensional Langevin-type stochastic processes subject to strong N-dimensional measurement noise T.S. Scholz*¹, F.R. Raischel¹, P.G.L. Lind², M.W. Wächter², B.L. Lehle² ¹University of Lisbon, Portugal, ²University of Oldenburg, Germany</p>	<p>[O4.02] The kinetic consistent method of MHD for high performance computing B. Chetverushkin¹, N. D'Ascenzo^{2,1}, V. Saveliev*¹ ¹Russian Academy of Sciences, Russia, ²DESY, Germany</p>
16:45-17:15	<p>[O1.06] A hierarchy of compressible two-fluid model with identified physical relaxations and related numerical methods for the modelling and simulation of bubbly flows F. Druil*^{1,2}, M. Massot^{1,3}, S. Kokh², A. Larat^{1,3}, V. Le Chenadec¹ ¹Laboratoire EM2C, France, ²Maison de la Simulation, France, ³Fédération de Mathématiques, France</p>	<p>[O2.07] Optimizing the performance of a petascale-enabled compressible two-phase flow solver P.E. Hadjidoukas*, D. Rossinelli, B. Hejazialhosseini, F. Wermelinger, J. Sukys, P. Koumoutsakos ETH Zurich, Switzerland</p>	<p>[O3.07] Uncertainty Estimation in Determining Liquid and Vapour Penetration Lengths for Diesel-like Sprays J. Sumit, K. Sharang, R. Banerjee* Indian Institute of Technology Hyderabad, India</p>	<p>[O4.03] Multi-fluid plasma modeling through the collisional transition regime U. Shumlak*¹, A. Ho¹, R. Lilly¹, S. Miller¹, N. Reddell¹, E. Sousa^{1,2} ¹University of Washington, USA, ²Air Force Research Lab, USA</p>
17:15-17:45	<p>[O1.07] On the mathematical structure of the Anisotropic Gaussian System for the simulation of dispersed multiphase flows on unstructured meshes A. Larat*^{1,2}, M. Massot^{1,2} ¹CNRS UPR288, France, ²Fédération de Mathématiques de l'Ecole Centrale Paris – FR CNRS 3487, France</p>	<p>[O2.01] Petascale simulations of cloud cavitation collapse J. Sukys*, P.E. Hadjidoukas, D. Rossinelli, F. Wermelinger, B. Hejazialhosseini, P. Koumoutsakos ETH Zurich, Switzerland</p>	<p>[O3.08] A practical and in parts adjoint based gradient computation methodology for efficient optimal magnetic divertor design in nuclear fusion reactors M. Blommaert*¹, W. Dekeyser², M. Baelmans², N.R. Gauger³, D. Reiter¹ ¹FZ Jülich GmbH, Germany, ²KU Leuven, Belgium, ³TU Kaiserslautern, Germany</p>	<p>[O4.04] High-order continuum kinetic simulations of collisionless plasmas in position-velocity phase space G.V. Vogman*¹, P. Colella¹, U. Shumlak² ¹University of California Berkeley, USA, ²University of Washington, USA</p>

Thursday, 4 th June 2015				
Room	ML Building/ML D28			
08:30-09:30	[K04] CASL: The Consortium for Advanced Simulation of Light Water Reactors – An energy innovation hub sponsored by the U.S. Department of Energy Douglas B. Kothe, <i>Oak Ridge National Laboratory, USA</i> <i>Session Chair: G. Tryggvason</i>			
09:30-10:30	[K05] Simulation and modeling of wakes behind wind turbine rotors and in wind farms Jens Sørensen, <i>Danish Technical University, Denmark</i> <i>Session Chair: B. Koren</i>			
10:30-10:45	Refreshment Break <i>Room: ML Building/Turbine Hall</i>			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
10:45-12:15	Title: Methods & Algorithms <i>Session Chair: A. Abgrall</i>	Title: Combustion & Flames <i>Session Chair: N. Adams</i>	Title: Uncertainty Quantification <i>Session Chair: C. Schwab</i>	Title: Applications <i>Session Chair: G. Tryggvason</i>
10:45-11:15	[O1.08] Iterative galerkin-enriched multiscale finite volume (i-Ge-MSFV) method P. Jenny*, D. Cortinovis <i>ETH Zurich, Switzerland</i>	[O2.09] Investigating the liquid jet atomization process by combining multiscale analysis and numerical simulation W. Aniszewski*, C. Dumouchel, T. Ménard <i>CNRS UMR6614-CORIA, France</i>	[O3.09] Sensitivity analysis of asymptotic Vlasov-Maxwell models using data mining techniques for uncertainty quantification J. Chaskalovic ¹ , F. Assous ² ¹ <i>University Pierre and Marie Curie - Paris, France,</i> ² <i>Ariel University & Bar-Ilan University, Israel</i>	[O4.05] Velocity-conditional mixing models for accurate joint velocity-scalar PDF simulations D.W. Meyer*, P. Jenny <i>ETH Zürich, Switzerland</i>
11:15-11:45	[O1.09] An anisotropic adaptive finite element method for the solution of time-dependent laminar combustion problems J. Carpio Huertas ¹ , M. Vera Coello ² , A.L. Sánchez Pérez ² , A. Liñán Martínez ¹ ¹ <i>Universidad Politécnica de Madrid, Spain,</i> ² <i>Universidad Carlos III de Madrid, Spain</i>		[O3.10] Probabilistic very short-term wind farm power forecasts based on varying-coefficient models: A case study of onshore wind farm Danilo T. Loncarek*, M. Dalto, M. Vašak, J. Matuško <i>University of Zagreb, Croatia</i>	[O4.06] Modelling of the spatial distribution of the induced activities in the RBMK-1500 reactor graphite components E. Narkunas*, A. Smaizys, P. Poskas, G. Bartkus <i>Lithuanian Energy Institute, Lithuania</i>
11:45-12:15	[O1.10] A substructuring method for phase change modelling in hybrid media. Direct simulation and optimum Design M. Azaiez*, F. Jelassi, M. Mint Brahim <i>University of Bordeaux, France</i>		[O3.11] Solid-particle solar receivers – uncertainty in particle size distribution G. Geraci*, M. Rahmani, A. Mani, G. Iaccarino <i>Stanford University, USA</i>	
12:15-13:15	Lunch & Poster viewing <i>Room: ML Building/Turbine Hall & ML Building/Floor F</i>			

Room	ML Building/ML D28			
13:15-14:15	[K06] Numerical simulation and HPC in Oil & Gas Industry: application in TOTAL group Philippe Ricoux, TOTAL SA, France Session Chair: F. Xiao			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
14:20-15:20	Title: Methods & Algorithms Session Chair: P. Koumoutsakos	Title: HPC Session Chair: P. Hajidoukas	Title: Uncertainty Quantification; Electronic, Nanoscale Session Chair: F. Xiao	Title: Kinetic Schemes Session Chair: M. Müser
14:20-14:50	[O1.11] Advantages of volume markers method in application for concentration profiles with several discrete values P.V. Karnakov ^{*1,2} , S.G. Cherny ² , V.N. Lapin ² ¹ Novosibirsk State University, Russia, ² Institute of Computational Technologies, Russia	[O2.10] The advanced multi-physics (AMP) package B. Philip ¹ , M. Berrill ¹ , K. Clarno ¹ , R. Sampath ³ , S. Allu ¹ , G. Dilts ² , J.A. Turner ^{*1} ¹ Oak Ridge National Laboratory, USA, ² Los Alamos National Laboratory, USA, ³ Exxon-Mobil, USA	[O3.12] DFT calculations of the electronic and transport properties of the zigzag graphene nanoribbons on hexagonal boron nitride heterostructures V.V. Ilyasov ¹ , V.C. Nguyen ^{*1} , I.V. Ershov ¹ , D.C. Nguyen ² ¹ Don State Technical University, Russia, ² Hanoi University of Science and Technology, Viet Nam	[O4.07] A new transport method for kinetic problems: Application to dense multi-phase flows F. Doisneau*, M. Arienti, J.C. Oefelein Sandia National Laboratories, USA
14:50-15:20	[O1.12] Residual based variational model for particle laden flows: Parametric and structural uncertainties F.A. Rochinha*, G.M. Guerra, H. Costa, F. Horta, M. Mattoso, R. Elias, A.L.G.A. Coutinho Universidade Federal do Rio de Janeiro, Brazil	[O2.11] A Hybrid MPI/OpenMP Plane Wave Ab-initio Materials Science Code for Energy Sciences Applications A. Canning Lawrence Berkeley National Laboratory, USA	[O3.13] Investigation of efficient catalysts for artificial water splitting S. Luber*, F.H. Hodel, J. Hutter, University of Zurich, Switzerland	[O4.08] Numerical approach for the generalized Langevin model in Eulerian frame with weakly compressible equation of state D. Azarnykh*, S. Litvinov, N.A. Adams Technical University of Munich, Germany
15:20-15:35	Refreshment Break Room: ML Building/Turbine Hall			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
15:35-18:35	Title: Methods & Algorithms Session Chair: P. Jenny	Title: Combustion & Flames; Applications Session Chair: J. Chen	Title: Electronic, Nanoscale Session Chair: M. Müser	Title: Wind, GEO, ETC Session Chair: J. Sorensen
15:35-16:05	[O1.13] On the transfer of energy in Richtmyer-Meshkov instability induced mixing flow Z. Xiao*, H. Liu Peking University, China	[O2.12] Analysis of soot formation in turbulent flames via massively parallel simulations A. Attili ^{*1} , F. Bisetti ¹ , M.E. Mueller ² , H. Pitsch ³ ¹ King Abdullah University of Science	[O3.14] A DNA molecule in salt solution: Adaptive resolution simulation J. Zavadlav, M. Praprotnik* National Institute of Chemistry, Slovenia	[O4.09] Modelling of an array of windfarm using coupled BEM-RANS and optimization using genetic programming approach S. Ijaz Fazil*, E.Y.K. Ng Nanyang Technological University,

		<i>and Technology, Saudi Arabia, 2Princeton University, USA, 3RWTH Aachen University, Germany</i>		<i>Singapore</i>
16:05-16:35	[O1.14] Fourier-spectral element approximation of the ion-electron Braginskii system with application to tokamak edge plasma in divertor configuration R. Pasquetti* ^{1,2} , S. Minjeaud ^{1,2} ¹ University of Nice-Sophia Antipolis, France, ² CNRS, France	[O2.13] Numerical investigation of multicomponent fuel liquid length and vapor penetration in high pressure hot gas flows B. Zhao, C.P. Chen* University of Michigan-Shanghai Jiao Tong University Joint Institute, China	[O3.15] Coupling four molecular dynamics codes in a massively parallel molecular-continuum framework P. Neumann*, N. Tchipev, H-J. Bungartz Technische Universität München, Germany	[O4.10] Micro-scale modelling framework for wind energy prediction J. Fang*, F. Porté-Agel École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
16:35-17:05	[O1.15] A novel approach to accurately simulate façade integrated photovoltaic plants in dense urban environments G. Corbellini*, S. Bouziri, F. Frontini, V. Medici University of Applied Sciences and Arts of Southern Switzerland, Switzerland		[O3.16] STOCK: Structure mapper and online coarse-graining kit for molecular simulations S.B. Bevc* ¹ , C.J. Junghans ² , M.P. Praprotnik ¹ ¹ National Institute of Chemistry, Slovenia, ² Los Alamos National Laboratory, USA, ³ National Institute of Chemistry, Slovenia	[O4.11] A simulation effort of turbulent transport in the edge and SOL plasma of tokamaks E.H. Serre* ¹ , H. Bufferand ² , C. Colin ¹ , A. Paredes ¹ , F. Schwander ¹ , G. Ciraolo ² , P. Ghendrih ² , P. Tamain ² ¹ M2P2 UMR 7340 CNRS-Aix-Marseille Université-Ecole Centrale Marseille, France, ² bCEA, IRFM, France
17:05-17:35	[O1.16] Finite element implementation for phase-change phenomena operating the volume translated Peng-Robinson equation of state A.K. Singh*, C.T. Veje University of Southern Denmark, Denmark		[O3.17] Direct prediction and size dependence of thermal conductivity of real-scale silicon nanowires C. Hou*, W. Ge, J. Xu, J. Li Chinese Academy of Sciences, China	
17:35-18:05	[O1.17] Accuracy and convergence of coupled finite-volume/Monte-Carlo codes for plasma edge simulations of nuclear fusion reactors K. Ghooos*, W. Dekeyser, G. Samaey, M. Baelmans KU Leuven, Belgium		[O3.18] The Parallel computing for the multi-physical composition of hydrodynamics and particle transport W. Shen*, J. Wei, J. Ren Institute of Applied Physics and Computational Mathematics, China	
18:05-19:35	Welcome Drinks Reception & Poster Session Room: ETH Main Building (HG) – Main Hall Centre – Floor E & ML Building/Floor F			
Friday, 5th June 2015				
Room	ML Building/ML D28			

08:30-09:30	[K07] Reliability and uncertainty in the simulation of complex energy systems Robert Moser, <i>University of Texas at Austin, USA</i> Session Chair: P. Koumoutsakos			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
09:30-10:30	Title: Methods & Algorithms Session Chair: F. Xiao	Title: Nuclear & Related Session Chair: S. Zaleski	Title: DNS & LES and Fluid Flows Session Chair: R. Abgrall	Title: Applications Session Chair: B. Koren
09:30-10:00	[O1.18] Computational methods for high temperature superconducting tapes in wind turbine generators V.M.R. Zermenó ¹ , A.B. Abrahamsen ² , N. Mijatovic ² , B.B. Jensen ³ , M.P. Soerensen ^{*2} ¹ Karlsruhe Institute of Technology, Germany, ² Technical University of Denmark, Denmark, ³ University of the Faroe Islands, Thorshavn, Faroe Islands	[O2.14] Coupled nuclear reactor simulation with the Virtual Environment for Reactor Applications (VERA) J.A. Turner ^{*1} , S. Hamilton ¹ , R.P. Pawlowski ² , S. Slattery ¹ ¹ Oak Ridge National Laboratory, USA, ² Sandia National Laboratory, USA	[O3.19] DNS and modeling of gas-liquid multiphase flow G. Tryggvason*, M. Ma, J. Lu, B. Aboulhasanzadeh <i>University of Notre Dame, USA</i>	[O4.12] Efficient evaluations of symmetric conservative metrics for high-order finite-difference schemes on a rotating grid Y. Abe ^{*1} , H. Aono ² , T. Nonomura ² , K. Fujii ² ¹ University of Tokyo, Japan, ² Japan Aerospace Exploration Agency, Japan
10:00-10:30	[O1.19] Hybrid Eulerian/Lagrangian Two Fluid Model (TFM) simulation of cyclone separation S. Pirker*, D. Kahrmanovic, S. Puttinger, S. Schneiderbauer <i>Johannes Kepler University, Austria</i>		[O3.20] A New LES/PDF method for computational modeling of turbulent reacting flows H. Turkeri ^{*1} , M. Muradoglu ¹ , S.B. Pope ² ¹ Koç University, Turkey, ² Cornell University, USA	[O4.13] Coupled multiscale safety simulations of Li-ion batteries J.A. Turner*, S. Allu, W.R. Elwasif, S. Kalnaus, A. Kumar, D.T. Lebrun-Grandie, S. Pannala, S. Simunovic, S. Slattery <i>Oak Ridge National Laboratory, USA</i>
10:30-10:45	Refreshment Break Room: ML Building/Turbine Hall			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
10:45-12:15	Title: Methods & Algorithms (contd) Session Chair: F. Xiao	Title: Nuclear & Related Session Chair: S. Zaleski	Title: DNS & LES and Fluid Flows Session Chair: R. Abgrall	Title: Applications Session Chair: P. Koumoutsakos
10:45-11:15	[O1.20] High-order implicit and explicit non-conforming finite element methods for elastoacoustic problems A. Rodríguez-Rozas ^{*1} , J. Diaz ² , H. Barucq ² ¹ University of the Basque Country, Spain, ² Inria Bordeaux – Sud-Ouest, Équipe-Projet Magique-3D, France	[O2.16] Numerical simulation of solid-liquid phase change in porous media via multiple-relaxation-time lattice Boltzmann method Q. Liu*, Y.L. He <i>Xi'an Jiaotong University, China</i>	[O3.21] Vortex methods applied to the large eddy simulation of wind turbine flows P. Chatelain*, I. Marichal, M. Duponcheel, G. Winckelmans <i>Université catholique de Louvain, Belgium</i>	[O4.14] Pin level safety analysis in a rod insertion accident (RIA) scenario with the parallel coupled code pCTF/PARCSv2.7 E. Ramos*, A. Abarca, J.E. Roman, R. Miró <i>Universitat Politècnica de Valencia, Spain</i>
11:15-11:45	[O1.21] Permeability upscaling in	[O2.17] Modeling turbulence	[O3.22] On specific sub-grid terms in	[O4.15] Computationally efficient

	fractured media via the Lattice-Boltzmann method R.A. Archer <i>University of Auckland, New Zealand</i>	modulation of droplet-laden flows D.W. Meyer*, N. Meinen, Y. Reinhardt <i>ETH Zürich, Switzerland</i>	large-eddy simulation of two-phase flows W. Aniszewski*, T. Ménard <i>CNRS UMR6614-CORIA, France</i>	dimension reduction of combustion chemistry via Principal Component Analysis based domain partitioning F. Perini*, R.D. Reitz <i>University of Wisconsin-Madison, USA</i>
11:45-12:15	[O1.22] Artificial neural networks for multi-scale thermal-fluid dynamic modeling of controlled superconducting magnet operation for tokamak fusion reactors A. Froio*, R. Bonifetto, S. Carli, A. Quartararo, L. Savoldi, R. Zanino <i>Politecnico di Torino, Italy</i>			[O4.19] GeoSIAM: An integrated 3D numerical modelling system for the characterization of a geological reservoir for storage and geothermal purposes R. Guandalini*, G. Agate, F. Colucci, F. Moia <i>RSE SpA, Italy</i>
12:15-13:15	Lunch & Poster viewing Room: ML Building/Turbine Hall & ML Building/Floor F			
Room	ML Building/ML D28			
13:15-14:15	[K08] State of the art in modeling and simulation of cavitating flows for liquid-fuel engineering Nikolaus Adams, TU Munich, Germany <i>Session Chair: S. Zaleski</i>			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
14:20-15:20	Title: Methods & Algorithms <i>Session Chair: M. Mishra</i>	Title: Nuclear & Related <i>Session Chair: F. Xiao</i>	Title: DNS & LES and Fluid Flows <i>Session Chair: B. Koren</i>	Title: Applications <i>Session Chair: G. Tryggvason</i>
14:20-14:50	[O1.23] Eulerian methods for the description of soot formation in flames: mathematical modelling and numerical schemes T.T. Nguyen* ¹ , F. Laurent ¹ , R.O. Fox ^{1,2} , B. Franzelli ¹ , R. Vicquelin ¹ , M. Massot ¹ <i>¹École Centrale Paris, France, ²Iowa State University, USA</i>	[O2.18] Light scattering models for thermotropic coating and surface appearance simulation D.P. Gruber* ¹ , K. Resch ¹ <i>¹Polymer Competence Center Leoben, Austria, ²Montanuniversität Leoben, Austria</i>	[O3.23] Combustion at low Mach number and its direct numerical simulation at large scale C.E. Frouzakis* ¹ , A.G. Tomboulides ² , S.G. Kerkemeier ¹ , P.F. Fischer ³ <i>¹Swiss Federal Institute of Technology, Switzerland, ²University of Western Macedonia, Greece, ³Mathematics and Computer Science Division, USA</i>	[O4.16] Integration of nonlocal description of flow in porous media A.H. Delgosaie ¹ , D.W. Meyer* ¹ , H. Tchelepi ² , P. Jenny ¹ <i>¹ETH Zurich, Switzerland, ²Stanford University, USA</i>
14:50-15:20	[O1.24] A fully three-dimensional simulation of thermal flows in active magnetic regenerator B. Xie, N. Hirao, F. Xiao*, T. Okamura <i>Tokyo Institute of Technology, Japan</i>	[O2.19] Direct numerical simulation of premixed flames flashback in turbulent channel flows with fuel stratification A. Gruber* ¹ , J.H. Chen ² <i>¹SINTEF Energy Research, Norway, ²Sandia National Laboratories, USA</i>	[O3.24] Bedrock topography reconstruction of glaciers from surface topography and mass-balance data L. Griesser* ¹ , M. Picasso ^{1,2} , M. Funk ^{1,3} <i>¹RUAG Defence, Switzerland, ²EPFL MATHICSE, Switzerland, ³ETHZ VAW,</i>	[O2.21] Drop impact on solid: Influence of solid surface properties Z. Jian*, C. Josserand, S. Zaleski, P. Ray <i>Institut D'Alembert, UPMC, France</i>

			Switzerland	
15:20-15:35	Refreshment Break Room: ML Building/Turbine Hall			
Rooms	ML Building/ML D28	ML Building/ML F36	ML Building/ML F38	ML Building/ML F39
15:35-18:30	Title: Applications <i>Session Chair: P. Angelikopoulos</i>	Title: Miscellaneous <i>Session Chair: P. Congedo</i>	Title: Applications <i>Session Chair: M. Ricchiuto</i>	Title: Applications <i>Session Chair: R. Teysier</i>
15:35-16:05	[O1.25] Effects of negative temperature coefficient behavior on pressure wave generations during knocking combustion H. Terashima* ¹ , M. Koshi ² ¹ The University of Tokyo, Japan, ² Yokohama National University, Japan	[O2.20] Multi-scale pore network method for two-phase flow in porous media K. Khayrat*, P. Jenny ETH Zurich, Switzerland	[O3.25] Vane-less, valve-less T-junction design through shape optimization K. Srinivasan, S. Jayanti* IIT Madras, India	[O4.17] Analysis of aeroacoustic noise generated from a rotating tire using large-eddy simulation D. Lee* ¹ , K. Kondo ² , Y. Abe ¹ , T. Nonomura ³ , T. Ikeda ⁴ , M. Koishi ⁴ , M. Yamamoto ² , K. Fujii ³ ¹ University of Tokyo, Japan, ² Tokyo University of Science, Japan, ³ Institute of Space and Astronautical Science/JAXA, Japan, ⁴ The Yokohama Rubber Corporation, Japan
16:05-16:35	[O1.26] Investigation of gas separation schemes based on electromagnetic excitation of internal energy modes N. Andric*, H. Gorji, P. Jenny ETH Zurich, Switzerland	[O2.22] Thrust, propulsive efficiency and power utilization of flapping foils investigated using a viscous vortex particle method A. Das*, R.K. Shukla, R.N. Govardhan Indian Institute of Science, India	[O3.26] Physics-driven approach to load balancing in massively parallel CFD L. Fu*, S. Litvinov, X.Y. Hu, N.A. Adams Technische Universität München, Germany	[O4.18] Transient LOFA computations for a VHTR using Large and Segment Domain Models Y.H. Tung ³ , Y.M. Ferng ³ , R. Johnson ² , C.C. Chieng* ¹ ¹ City University of Hong Kong, Hong Kong, ² Idaho National Lab, USA, ³ National Tsing Hua University, Taiwan
16:35-16:45	Closing Room: ML Building/ML D28			