MATHEMATICAL CONVENTIONS USED IN *JSV*

Vectors, Tensors and Matrices
- The preferred appearance of vectors, tensors and matrices is **bold upright**.
- Do not use the notation Det **A.** The preferred notation is det **A**.
- Vector calculus and multiplication:

The symbol Δ for Laplacian operator in 3D should be avoided. Replace with:

∇^2 (3D Laplacian)
Web reference: Eric W. Weisstein. "Laplacian." From MathWorld - A Wolfram Web
Resource http://mathworld.wolfram.com/Laplacian.html

The symbol $\square$ for Laplacian operator in 4D should be avoided. Replace with:

$\square^2$ (d'Alembertian operator or 4D Laplacian)
Web reference: Eric W. Weisstein. "d'Alembertian." From MathWorld - A Wolfram Web
Resource. http://mathworld.wolfram.com/dAlembertian.html

- The notation rot **A**, for curl of the vector field **A,** should not be used – use curl **A** instead. Divergence may be referred to as div **A**.

- For preference, use nabla notation for the divergence and curl operators:
  $\nabla \cdot \mathbf{A}$, $\nabla \times \mathbf{A}$ (not $\nabla \wedge \mathbf{A}$).

Web references:
http://mathworld.wolfram.com/VectorDerivative.html
http://mathworld.wolfram.com/Divergence.html
http://mathworld.wolfram.com/Curl.html

- Spaces either side of $\cdot$ and $\times$ are recommended; likewise in the scalar and vector products: $\mathbf{A} \cdot \mathbf{B}$, $\mathbf{A} \times \mathbf{B}$

Square Root of Minus 1 (Imaginary Numbers): Both i and j (Roman lower case) are acceptable for the imaginary unit (square root of minus one), provided the author is consistent throughout the article.

Real and imaginary part notation
Rather than $\Re$ [the script-R] for real part, authors are asked to use Re(...).
Likewise rather than $\Im$ [the script-I] for imaginary part, authors are asked to use Im(...).

Increments and differentials
The following notation should be used for increments and differentials: Δx, δx , dx. They should appear upright.

Functions and Variables:
- Variables, if represented by one character should be italic, for example, *x, λ*; if represented by more than one character they should, in some cases, be roman,
- Variables represented by abbreviations of more than one letter should be upright, for example 'S.D.' for standard deviation.
- Two-letter symbols defining 'dimensionless groups' should be italic, for example: *Re* Reynolds number.
- Multiple letter functions like cos, tanh, log, should be upright.
- JSV style is that **single letter** functions should be in italic. Examples include:
Γ(*x*)	Gamma Function
O(*x*), *o*(*x*)	Order symbols
H(*x*), *δ*(*x*)	Heaviside unit step function and its derivative (Dirac delta function)

$J_n(x)$, $Y_n(x)$ Bessel, Neumann functions (order n)

$I_n(x)$, $K_n(x)$ Modified Bessel functions

$H_n^{(1)}(x)$, $H_n^{(2)}(x)$ Hankel functions

j_n, y_n, etc.   Spherical Bessel counterparts of the above

Subscripts:

(i)   *Single-letter* subscripts are in general to be italicised, except in special cases.

        Examples: x_i , P_R

(ii)   Subscripts formed from *letter symbols* are to retain the format of the original symbol (normally italic). This applies regardless of the number of subscripted symbols.

        Examples: A_{ij} , T_{lmn} , S_{AB}

(iii) Subscripts of two or more letters identifiable as *words or word-abbreviations* should be in roman upright.

        Examples: A_{pipe} , Z_{local} , f_{max}