INSTRUCTIONS FOR PREPARING MATH EXPRESSIONS IN FINAL FORM

The transition to online electronic processing of manuscripts requires, to the extent possible, that certain basic mathematical symbols and equations in those manuscripts must be compatible with AMS style and the Sheridan Press typesetting system to minimize errors that may occur in the technical editing and typesetting of manuscripts. These instructions emphasize six fundamental areas of mathematical expressions that must be addressed when preparing manuscripts in final form: 1) Use of MathType, 2) mathematical symbol fonts, 3) equations contained within text, 4) arguments for exponential functions, 5) nesting/fence structure, and 6) units.

1) *Use of MathType.* For those authors using Microsoft Word to prepare their manuscripts, our press's typesetting needs require that display equations (centered alone, usually with an equation number) be entered using MathType software (or the Microsoft Equation Editor). Do not use MathType to number the equations; the equation numbers should be entered from the keyboard outside of MathType. Conversely, our press also requires that inline equations and variables (surrounded by text) be entered outside of MathType straight from the keyboard, unless not practical (e.g., stacked super/subscripts, overbars, carets).

2) *Mathematical symbols.* Symbols must be of the same font style both in text discussion and in displayed equations or terms (and figures should be prepared to match). Scalar single-character symbols are set italic, Greek, or script. Examples are u, υ (note that Greek upsilon is used for v to avoid confusion with Greek nu often used for viscosity), w, x, y, z, f, g, r, indices such as i or j, and constants such as C_D, k, or K. Multiple-character scalar variables, abbreviations, nondimensional numbers, and acronyms for variables are set regular nonitalic: LWC, Re, Ro, BT, abs, obs, max, min, Re/Im (real/imaginary), etc. For vectors, use boldface nonitalic Times Roman as in **V**, **v**, or **x**, and **i**, **j**, and **k** unit vectors. For matrix notation use nonitalic Ariel or Helvetica boldface font as in **A**, **B**, or **M**. Make greek vectors and matrices boldface. All mathematical operator abbreviations/acronyms are set lower case regular Roman font, except O (on the order of): sin, cos, tan, tanh, cov, Pr (for probability; note same as Prandtl number), const (for constant), c.c. (complex conjugate).

3) *Unnumbered equations set inline in text*. Brief equations or terms set inline in text must be set as a single line expression (using the keyboard rather than MathType to the extent possible) since page proofs are not double spaced, for example, ρ^{-1} $p/$ x or $(1/\rho)$ $p/$ x or $(a - b)/(c + d)$; that is, use a superscript -1 for the denominator. In case of a more complicated term or equation, it should be set (using MathType, if a Word file) as an unnumbered display equation, such as

$$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2c}.$$

4) *Arguments of exponential functions*. Whether in text or in a displayed equation, the argument for an exponential written as $e^{(\text{arg})}$ must be limited to a single line and not a built-up fraction because of the small font size in the print journal. If a built-up fraction is necessary for the argument, use the form exp(arg), again setting complicated expressions as display equations.

5) *Nesting fences*. The following hierarchy for fences is used in nesting: $\langle\{[()]\}\rangle$. An author may deviate from AMS style if the usage is defined in the text (e.g., brackets for set notation, angle brackets to indicate an averaged or mean quantity).

6) *Units*. Units are always set on a single line with a space separating the denominator, which is set with a superscript -1, -2, and so on, rather than using a slash for "per." Examples are g kg^{-1}, m^2 s^{-1}, W m^{-2}, g m^{-3}, and m s^{-1} (note that ms^{-1} is the unit for "per millisecond").