

Technical Review

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In their recent article, Dahm, *et al.*¹ describe a novel and efficient method for... The physical problem of interest is The problem has application in the fields of.... A key model equation in this study is the reaction kinetics equation

$$\frac{\partial c_i}{\partial t} + \mathbf{u} \cdot \nabla c_i - \frac{1}{\rho} \nabla \cdot \rho D_i \nabla c_i = \sum_{j=1}^r \nu_{ij} w_j. \quad (1)$$

In this equation t represents time, c_i the molar concentration of the species i , \mathbf{u} the velocity vector, ρ the density, D_i the diffusivity of species i , ν_{ij} the matrix of stoichiometric coefficients, and w_j the reaction rate of the j th reaction.

The typical method of solving this problem is to.....In many cases this is deficient because.... Hence a new method is proposed which.... The method is applied to a set of test problems. It is seen that.... The authors summarize their major conclusions as follows....

The article is generally well written.... A small deficiency is seen in that... Nevertheless the strength of this paper is its clarity in.....and novelty in.....Those who are interested in problems in the related fields of.... would find this paper to be useful.

Notes

- Use the format provided here as a template; the text is entirely yours to write.
- Your review *must* consider a recent, $t \in [2000 \text{ A.D.}, \infty)$, and substantive article from the *SIAM Journal on Applied Mathematics*.
- One page maximum.
- Run your text file through a spell checker (`linux` command: `ispell filename.tex`).
- Always use complete sentences.
- Leave two spaces after a period. Leave one space after a comma.
- Give a footnote in the precise format given below. Do not be redundant with the text.
- Use commas or periods at the end of equations as appropriate.
- Do not use contractions (such as don't).
- Do not begin sentences with variables: x is distance.
- Avoid itemized lists in formal technical writing; it's too much like PowerPoint.
- Avoid too many empty qualifiers such as "very," "reasonably," "quite," "rather." Unless contrasted, "The equations is good," is essentially the same as "The equation is very good," or "The equation is rather good."
- Identify acronyms: Ordinary differential equations (ODEs) are manna from heaven.
- Use \sin , not *sin*; \ln , not *ln*; \cos^{-1} , not *cos*⁻¹.
- Avoid "fortran" or "matlab"-type notations: $\mathbf{A} \cdot \mathbf{x}$, not $\mathbf{A} * \mathbf{x}$ for matrix products; xy , not $x * y$, for scalar products, 6.02×10^{23} , not $6.02E23$.

¹Dahm, W. J. A., Tryggvason, G., and Zhuang, M., 1996, "Integral Method Solution of Time-Dependent Strained Diffusion-Reaction Layers with Multistep Kinetics," *SIAM Journal on Applied Mathematics*, Vol. 56, No. 4, pp. 1039-1059.

- Use properly sized parentheses: $\left(\frac{x}{y}\right)$.
- Italicize units: I have a mass of 118 *kg*. Leave a space between the number and the unit.
- Avoid referring to equations or figures which are “above” or “below.”
- Avoid unweildy terms for inline equations: Don’t use $y = \frac{x}{2}$. Do use $y = x/2$.
- Do take advantage of the extra space for equations which are set off:

$$y = \frac{x}{2}$$

- Minimize quotations. When necessary, use matched pairs of single quotes, like this: “your quote here”.
- Identify all variables with words of description.
- All mathematical variables, whether within the text or in a separate equation, should be written in math mode, *e.g.* “When $x = 0$, there is a singularity.”
- English text within equations should be in text mode; use the `mbox` and `qqquad` commands for this:

$$x = 1 \quad \text{when} \quad y = 0.$$

- Do not let your review become dominated by equations.
- Avoid simplistic or trite statements such as, “The authors have pointed the way to a method from which we can all benefit.”