Instructions for preparing Nagasaki-Workshop abstract

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1 Instructions

The objective of this abstract is to show the way of preparing 2-10 pages Abstract for the Workshop on Numerical Analysis of Flow Problems and Validated Computations, November 20–22, 2005. The abstract has to contain (1) the presentation title, (2) names of presentation author and co-author(s), and (3) contact information with surface mail and e-mail addresses. The abstract should satisfy the following format:

- A4 paper (210mm × 297mm) and 11pt article LaTeX documentclass
- left, right and top margin with 25mm, and bottom margin with 30mm
- no page number
- title in **bold** font

Please prepare your abstract in electronic file with pdf format and send it to Q-NA-Sympo@math.kyushu-u.ac.jp by October 31, 2005. Please confirm that the abstract in pdf format is also in A4 paper size, not in letter paper size.

2 How to display equations

LaTeX style files "amstex" and "amsfonts" are recommended to write equations.

Let A be an $N \times N$ real matrix, and f be an N real vector. We assume that these matrix and vector are obtained by a finite element discritization [1] of a partial differential equation, and also assume that the matrix is of full rank. We consider a variational problem to find $u \in \mathbb{R}^N$ satisfying

$$(A\,u,\, v) = (f,\, v) \tag{1}$$

for all $v \in \mathbb{R}^N$.

Several linear solvers, e.g., GMRES [2] can solve the equation (1) approximately.

References

[1] P. G. Ciarlet. *The Finite Element Method for Elliptic Problems*, North-Holland, 1978.

[2] Y. Saad, M. H. Schultz. GMRES : A generalized minimal residual algorithm for solving nonsymmetric linear systems, *SIAM J. Sci. Statist. Comput.*, 7 (1986) 856–869.