

Foreword

Programming is an area at the interface between scientific computing and applied mathematics which has been very active lately and so it was thought that M2AN should open its pages to it in a special issue.

This is because many new tools have appeared ranging from templates in C++ to Java interface library and parallel computing tools. There has been a diffusion of computer sciences into numerical analysis and these new tools have made possible the implementation of very complex methods such as finite element methods of arbitrary degree.

This issue is not an overview of the field. The papers have been selected on the basis of their programming creativity, the quality of the final product and their relevance to numerical methods. But we have discovered on the way that the programming community does not publish much outside conference proceedings. Furthermore it is often difficult to pinpoint the difficulties and solutions. One must avoid tedious lists of function or subroutine definitions, but one must also explain in details the new programming ideas such as data driven programs or generic programming, notions which are familiar to few people only.

What is new here is that the papers have been screened by reviewers who are themselves programmers and also applied mathematicians. This successful experience leads to encourage submission of more papers of this kind in the future as well.

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