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PREFACE

Parallel MIMD computers consisting of many processors, interconnected by a communication network, can offer supercomputing capabilities at a relatively low cost. If programmed properly, they will be beneficial in number crunching applications and in applications where the response time is critical.

Parallel computing research is now yielding a continuously growing stream of results and the first applications within Shell may be expected to be delivered within a few years. The aim of this conference was to review the progress of research in this field and to discuss the problems which still have to be solved.

The subjects covered in the conference were:

Experiences with various hardware and system software configurations
Parallel programming methods and parallel languages
General purpose mathematical software
Seismic data processing
Mechanical strength calculations
Fluid flow simulation
Optimization in logistics applications.

The papers were presented by invited researchers from universities (Oxford, Cornell), the Los Alamos Research Laboratory, the computer industry (Philips Research Laboratories, Thinking Machines Corporation) and two Shell laboratories (Koninklijke/Shell Exploration and Production Laboratorium, Rijswijk, Koninklijke/Shell-Laboratorium, Amsterdam). Contributions that were largely based upon existing publications have not been included in these proceedings.

The conference was organized by Koninklijke/Shell-Laboratorium, Amsterdam, as one in a series of Shell conferences on subjects of research.

Many people have helped with the organization of the conference. In particular we want to thank Mrs. G.L. Abrahamsz and Mrs. S.M. de Vries.

Gerrit A. van Zee
Johannes G.G. van de Vorst

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