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Preface

In August 1999, the Twelfth Workshop on Languages and Compilers for Parallel Computing (LCPC) was hosted by the Hierarchical Tiling Research group from the Computer Science and Engineering Department at the University of California San Diego (UCSD). The workshop is an annual international forum for leading research groups to present their current research activities and the latest results. It has also been a place for researchers and practitioners to interact closely and exchange ideas about future directions. Among the topics of interest to the workshop are language features, code generation, debugging, optimization, communication and distributed shared memory libraries, distributed object systems, resource management systems, integration of compiler and runtime systems, irregular and dynamic applications, and performance evaluation. In 1999, the workshop was held at the International Relations/Paci c Studies Auditorium and the San Diego Supercomputer Center at UCSD. Seventy-seven researchers from Australia, England, France, Germany, Korea, Spain, and the United States attended the workshop, an increase of over 50% from 1998.

The program committee of LCPC '99 along with external reviewers as needed, were responsible for evaluating the submitted papers. Forty-eight papers were submitted, and of those, twenty-seven were selected to be presented as full papers at the workshop. In addition, thirteen submissions were presented as posters in a special poster session. Using feedback provided both before and after the presentations, all authors were given the opportunity to improve their papers before submitting the nal versions contained in this volume. Short abstracts of the poster presentations are also included.

In addition to the paper and poster sessions, LCPC '99 also featured an invited talk by Burton Smith, Chief Scientist at Tera Computer (now renamed Cray) on "Optimization for the Tera MTA". This talk gave an overview of the MTA architecture and the program transformations in the MTA compiler that allow it to take advantage of the MTA's unique architectural characteristics. The home of the rst Tera MTA is the San Diego Supercomputer Center, and a tour of SDSC, including the Tera MTA, was o ered to all participants. We gratefully thank Burton Smith for his excellent presentation and for his full participation in the workshop.

A nal feature of this year's workshop was a panel session on Benchmarking organized by Keshav Pingali. This session grew out of a seminar on Tiling for Optimal Resource Allocation (hosted by the International Conference and Research Center for Computer Science at Schloss Dagstuhl in 1998) in which setting up a suite of benchmarks for locality that could be used by the general community was proposed. The panel, whose members also included Rudi Eigenmann, David Padua, and Sanjay Rajopadhye, presented a lively and diverse discussion on the merits of such a suite.

The organizers wish to acknowledge the San Diego Supercomputer Center and UCSD for their help. In particular, the conference was organized by Joann Pagan of UCSD Conference Services, with help from Nancy Jensen at SDSC. We especially wish to thank the software support sta , particularly Cindy Paloma, and graduate students Kang Su Gatlin, Karin Hogstedt, Beth Simon, and Michelle Mills Strout, all of the Computer Science and Engineering Department, for their excellent help. We also wish to acknowledge the great help of Chanathip Namprempre in editing and putting together this volume.

We would like to give special thanks to the LCPC'99 program committee and the nameless external reviewers for their e orts in reviewing the submissions. Both the steering committee and the program committee helped with advice and suggestions on the organization of the workshop. Finally, we wish to thank all of the participants who helped to create a lively and constructive atmosphere of discussion, and the authors for sharing their signi cant research with us at LCPC '99.

May 2000

Larry Carter, Jeanne Ferrante
Program Chair
LCPC'99

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