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# New Trends in Constraints

Joint ERCIM/Compulog Net Workshop  
Paphos, Cyprus, October 25-27, 1999  
Selected Papers



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## Preface

Constraint programming is a highly declarative and relatively new approach to computing in which the programming process consists mainly of stating a set of requirements (the constraints) and solving them via general as well as domain-dependent methods. In the last decade, constraint programming has evolved from a basic research idea to a powerful programming paradigm, that is increasingly used to model and solve many hard real-life problems. Many areas of computer science have taken advantage of the power of constraints, like optimization, numerical computing, natural language processing, computer algebra, and computer graphics, to mention a few.

This book contains a selection of contributions on constraints, most of which were presented at a workshop held in Paphos (Cyprus) on October 25-27, 1999. The workshop was the third in a row in a series of joint annual workshops organized by the Compulog Net area on Constraint Logic Programming and the ERCIM Working Group on Constraints. As these workshops repeatedly attracted interesting and high quality contributions, the organizers decided this time to publish its proceedings. All contributions were refereed.

ERCIM, the European Research Consortium for Informatics and Mathematics, is an organization dedicated to the advancement of European research and development in information technology and applied mathematics. It comprises institutions from fourteen European countries. The ERCIM Working Group on Constraints was founded in 1996 and since then it has been organizing annual workshops.

Compulog Net, the European Network of Excellence in Computational Logic, comprises over 100 nodes from 20 European countries, representing leading universities, research centres, and industrial companies. The aim of this network is to support all phases of technological change - invention, innovation, diffusion - associated with the research, development, and application of logic-based techniques and methods in all areas of computing. The Constraint Logic Programming area of Compulog Net deals in particular with extensions of logic programming to constraints and concurrent programming.

The editors would like to take the opportunity to thank the authors for having agreed to contribute to this volume and the referees for their useful reviews of the submitted papers. We hope that the present volume will be of interest to the researchers working on all uses of constraints, for programming, modelling, and processing.

## Organization

The 1999 workshop on constraints, that was held in Cyprus on October 25-27, was organized jointly by the ERCIM working group on constraints and by the Constraint Logic Programming area of the Compulog Net network of excellence.

### Organizers

Krzysztof R. Apt	CWI and University of Amsterdam, the Netherlands (coordinator of the ERCIM working group on constraints)
Antonis C. Kakas	University of Cyprus
Eric Monfroy	CWI, the Netherlands
Francesca Rossi	University of Padova, Italy (CLP area coordinator of Compulog Net)

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