

# Preface

This volume contains the papers presented at the “First International Symposium on Foundations of Information and Knowledge Systems” (FoIKS 2000), which was held in Burg, Germany from February 14th to 17th, 2000.

FoIKS is intended to be a biannual event focussing on theoretical foundations of information and knowledge systems. It aims to take up the old tradition of the conference series “Mathematical Fundamentals of Database Systems” (MFDBS) which encouraged East-West collaboration in the field of database theory. Former MFDBS conferences were held in Dresden in 1987 (Springer LNCS 305, edited by Joachim Biskup, János Demetrovics, Jan Paredaens, and Bernhard Thalheim), in Visegrád in 1989 (Springer LNCS 364, edited by János Demetrovics and Bernhard Thalheim), and in Rostock in 1991 (Springer LNCS 495, edited by Bernhard Thalheim, János Demetrovics, and Hans-Detlef Gerhard).

Another goal of the MFDBS conference series has always been to attract researchers working in mathematical fields such as discrete mathematics, combinatorics, logics, and finite model theory who are interested in applying their theories to research on database and knowledge base theory. To that end, FoIKS takes up the tradition of providing a forum for mathematical foundations in a specific branch of computer science. A first attempt to reestablish the MFDBS tradition was made in 1995 with a follow-up workshop “Semantics in Databases” to ICDT (Springer LNCS 1358, edited by Bernhard Thalheim and Leonid Libkin).

In addition, the FoIKS symposium is intended to be a forum for intensive discussions. For this reason, the time slot of long and short contributions is 60 and 30 minutes, respectively, followed by 30 and 15 minutes for discussions, respectively. Furthermore, participants are asked in advance to prepare to act as correspondents to a contribution of another author. There are also special sessions for the presentation and discussion of open research problems.

The FoIKS 2000 call for papers solicited contributions dealing with any foundational aspect of information and knowledge systems, e. g.

- logical foundations and semantics of datamodels,
- dependency theory,
- integrity and security,
- temporal aspects,
- foundations of information systems design including Web-based information services,
- query languages and optimization,

database dynamics,  
intelligent agents,  
non-monotonic reasoning,  
application of non-classical logics,  
finite model theory,  
deduction, abduction, and induction in data and knowledge bases.

The programme committee received 45 submissions by authors from 22 different countries. Each paper was carefully reviewed by at least three experienced referees. Fourteen papers were chosen for long presentations, four papers for short presentations. This volume contains polished versions of these papers modified according to comments made in the reviews. A few papers will be selected for further extension and publishing in a special issue of the journal “Annals of Mathematics and Artificial Intelligence”.

We would like to thank all authors who submitted papers and all workshop participants for the fruitful discussions. We are grateful to the members of the programme committee and the external referees for their timely expertise in carefully reviewing the papers, and we would like to express our thanks to our hosts for the enjoyable week in the pleasant surroundings of the Spreewald.

**February 2000**

**Klaus-Dieter Schewe  
Bernhard Thalheim**

## Programme Committee Co-chairs

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## External Referees

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## Organisation

FoIKS 2000 was organised by the Database and Information Systems team from the Technical University of Cottbus:

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