

# Lecture Notes in Artificial Intelligence

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Edited by J. G. Carbonell and J. Siekmann

# Lecture Notes in Computer Science

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# Theorem Proving with Analytic Tableaux and Related Methods

5th International Workshop, TABLEAUX '96  
Terrasini, Palermo, Italy, May 15-17, 1996  
Proceedings



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## Foreword

The present volume contains a selection of papers presented at the 5th Workshop on Theorem Proving with Analytic Tableaux and Related Methods TABLEAUX96 held in Terrasini (near Palermo, Italy) during May 15-17, 1996. Details of the previous workshops, scientific and organising committees, referees, and sponsoring institutions can be found in the appended index. The members of the scientific committee worked together closely for several months, and met twice in Milan, in November 1995 and January 1996. Every contributed paper was evaluated by at least three referees – to whom our warmest thanks. The acceptance rate turned out to be close to 50%.

During the last few years, the scope of the Tableaux workshops has widened, and general tableaux methodologies have progressed towards the stage of full maturity. As the reader will see, together with several papers pertaining to the traditional domain of tableaux reasoning, the volume contains a few papers dealing with other approaches to automated reasoning.

Interestingly enough, the spectrum of logics dealt with by all these papers covers several nonclassical logics – including modal, intuitionistic, many-valued, temporal, and linear logic.

The growing success of these workshops is witnessed, among others, by the fact that, as regards location, the schedule of the next editions is virtually complete for the mid-term, and we can confidently say *arrivederci* to TABLEAUX97, TABLEAUX98, ...

We gratefully and especially acknowledge the generous financial support of the President of Università degli Studi di Milano.

March 1996

Pierangelo Miglioli  
Ugo Moscato  
Daniele Mundici  
Mario Ornaghi

March 1996

### Previous Tableaux Workshops

1992	Lautenbach, Germany	1993	Marseille, France
1994	Abingdon, England	1995	St. Goar, Germany

### Organising Committee

A. Avellone	University of Milan	M. Ferrari	University of Milan
P. Miglioli	University of Milan	U. Moscato	University of Milan
M. Ornaghi	University of Milan		

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P. Schmitt	University of Karlsruhe, Germany
C. Schwind	LIM-CNRS, University of Marseille, France
G. Wrightson	University of Newcastle, Australia

**Invited speakers**

Peter B. Andrews  
Dov M. Gabbay  
Erik Rosenthal

Carnegie Mellon University, Pittsburgh, U.S.A.  
Imperial College, London, U.K.  
University of New Haven, U.S.A. (banquet speech)

**Referees**

Chandrabose Aravidan  
Alessandro Avellone  
Peter Baumgartner  
Bernhard Beckert  
Krysia Broda  
Alan Bundy  
Felice Cardone  
Carlo Cellucci  
Stefania Costantini  
Marcello D'Agostino  
Gilles Dowek  
Roy Dyckhoff  
Mauro Ferrari  
Melvin Fitting  
Ulrich Furbach  
Didier Galmiche  
Anastasius Gavras

Laura Giordano  
Rajeev Goré  
Jean Goubault  
Reiner Hähnle  
Andreas Herzig  
Alain Heuerding  
Gaetano A. Lanzarone  
Reinhold Letz  
Ian Mackie  
Jean-Yves Marion  
Pierangelo Miglioli  
Ugo Moscato  
Max Moser  
Daniele Mundici  
Neil Murray  
Gerd Neugebauer

Ilkka Niemelä  
Andreas Nonnengart  
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Peter H. Schmitt  
Klaus Schneider  
Johann Schumann  
Marko Schütz  
Camilla Schwind  
Ugo Solitro  
Frieder Stolzenburg  
H.C.M. de Swart  
Silvio Valentini  
Lincoln Wallen  
Christoph Weidenbach  
Graham Wrightson

**Sponsors**

AILA (Associazione Italiana di Logica e sue Applicazioni).  
Azienda Provinciale del Turismo di Palermo (request pending).  
CNR (Consiglio Nazionale delle Ricerche).  
Dipartimento di Scienze dell' Informazione, Università degli Studi di Milano.  
The President of Università degli Studi di Milano.  
Regione Sicilia (request pending).

**Short Papers**

The regular conference programme included the presentation of six short papers. Informal proceedings containing these papers appeared as the internal report RI-DSI 154-96 at Dipartimento di Scienze dell'Informazione, Università di Milano, Via Comelico 39, 20135 Milano, Italy.

Combinatorial analytic tableaux in discrete optimization

*Gennady Davydov, Inna Davydova*

Relations between propositional normal modal logics: an overview

*Rajeev Goré, Wolfgang Heinle, Alain Heuerding*

A remark on the p-simulability of proof systems by path dissolution

*Reiner Hähnle, Neil Murray, Erik Rosenthal*

A duplication and loop checking free proof system for S4

*Guido Governatori*

Multi-modal reasoning as reasoning in hybrid theory

*Uwe Petermann*

Implementing analytic tableau in the SEQUEL programming language

*Mark Tarver*

# Table of Contents

## Invited Lectures

- On sets, types, fixed points, and checkerboards ..... 1  
*Peter B. Andrews, Matthew Bishop*
- Fibred tableaux for multi-implication logics ..... 16  
*Marcello D'Agostino, Dov M. Gabbay*

## Contributed Papers

- Interpolation for a sequent calculus of generalized quantifiers ..... 36  
*Natasha Alechina*
- Almost duplication-free tableau calculi for propositional Lax logics ..... 48  
*Alessandro Avellone, Mauro Ferrari*
- Combining many-valued and intuitionistic tableaux ..... 65  
*Matthias Baaz, Christian G. Fermüller*
- Cyclic connections ..... 80  
*Gérard Becher*
- Incremental theory reasoning methods for semantic tableaux ..... 93  
*Bernhard Beckert, Christian Pape*
- The disconnection method: a confluent integration of unification in the analytic framework ..... 110  
*Jean-Paul Billon*
- Sequent calculi for default and autoepistemic logics ..... 127  
*Piero A. Bonatti*
- Minimal model generation with positive unit hyper-resolution tableaux .... 143  
*François Bry, Adnan Yahya*



Distributed modal theorem proving with KE .....	160
<i>Jeremy Pitt, Jim Cunningham</i>	
A simple tableau system for the logic of elsewhere .....	177
<i>Stéphane Demri</i>	
Situational calculus, linear connection proofs and STRIPS-like planning: an experimental comparison .....	193
<i>Bertram Fronhöfer</i>	
Efficient loop-check for backward proof search in some non-classical propositional logics .....	210
<i>Alain Heuerding, Michael Seyfried, Heinrich Zimmermann</i>	
Strong normalization for all-style $LK^{1a}$ .....	226
<i>Jean-Baptiste Joinet, Harold Schellinx, Lorenzo Tortora de Falco</i>	
T-string-unification: unifying prefixes in non-classical proof methods .....	244
<i>Jens Otten, Christoph Kreitz</i>	
A timing refinement of intuitionistic proofs and its application to the timing analysis of combinational circuits .....	261
<i>Michael Mandler</i>	
A tableau calculus for minimal model reasoning .....	278
<i>Ilkka Niemelä</i>	
On the intuitionistic force of classical search .....	295
<i>Eike Ritter, David Pym, Lincoln Wallen</i>	
Proof-search in intuitionistic logic based on constraint satisfaction .....	312
<i>Andrei Voronkov</i>	
<b>Authors Index</b> .....	<b>330</b>