

CONTENTS

Foreword	v
Preface	vii
Polynomial optimization on odd-dimensional spheres.....	1
<i>John P. D'Angelo and Mihai Putinar</i>	
Engineering systems and free semi-algebraic geometry	17
<i>Mauricio C. de Oliveira, J. William Helton, Scott A. McCullough, and Mihai Putinar</i>	
Algebraic statistics and contingency table problems: Log-linear models, likelihood estimation, and disclosure limitation	63
<i>Adrian Dobra, Stephen E. Fienberg, Alessandro Rinaldo, Aleksandra Slavkovic, and Yi Zhou</i>	
Using invariants for phylogenetic tree construction.....	89
<i>Nicholas Eriksson</i>	
On the algebraic geometry of polynomial dynamical systems.....	109
<i>Abdul S. Jarrah and Reinhard Laubenbacher</i>	
A unified approach to computing real and complex zeros of zero-dimensional ideals	125
<i>Jean Bernard Lasserre, Monique Laurent, and Philipp Rostalski</i>	
Sums of squares, moment matrices and optimization over polynomials	157
<i>Monique Laurent</i>	
Positivity and sums of squares: A guide to recent results.....	271
<i>Claus Scheiderer</i>	
Noncommutative real algebraic geometry some basic concepts and first ideas.....	325
<i>Konrad Schmüdgen</i>	
Open problems in algebraic statistics	351
<i>Bernd Sturmfels</i>	
List of workshop participants.....	365