

Manindra Agrawal • Vikraman Arvind  
Editors

# Perspectives in Computational Complexity

The Somenath Biswas Anniversary Volume

 Birkhäuser

# Contents

<b>1</b>	<b>Complexity Theory Basics: NP and NL . . . . .</b>	<b>1</b>
	Vikraman Arvind	
<b>2</b>	<b>Investigations Concerning the Structure of Complete Sets . . . . .</b>	<b>23</b>
	Eric Allender	
<b>3</b>	<b>Space Complexity of the Directed Reachability Problem over Surface-Embedded Graphs . . . . .</b>	<b>37</b>
	N. Variyam Vinodchandran	
<b>4</b>	<b>Algebraic Complexity Classes . . . . .</b>	<b>51</b>
	Meena Mahajan	
<b>5</b>	<b>A Selection of Lower Bounds for Arithmetic Circuits . . . . .</b>	<b>77</b>
	Neeraj Kayal and Ramprasad Saptharishi	
<b>6</b>	<b>Explicit Tensors . . . . .</b>	<b>117</b>
	Markus Bläser	
<b>7</b>	<b>Progress on Polynomial Identity Testing-II . . . . .</b>	<b>131</b>
	Nitin Saxena	
<b>8</b>	<b>Malod and the Pascaline. . . . .</b>	<b>147</b>
	Bruno Poizat	
<b>9</b>	<b>A Tutorial on Time and Space Bounds in Tree-Like Resolution . . . . .</b>	<b>159</b>
	Jacobo Torán	

<b>10</b>	<b>An Entropy-Based Proof for the Moore Bound for Irregular Graphs . . . . .</b>	<b>173</b>
	S. Ajesh Babu and Jaikumar Radhakrishnan	
<b>11</b>	<b>Permutation Groups and the Graph Isomorphism Problem . . . . .</b>	<b>183</b>
	Sumanta Ghosh and Piyush P. Kurur	