

# Introduction

This volume contains the Proceedings of the Twentieth International Workshop on Operator Theory and Applications (IWOTA), held at Hotel Real de Minas in Guanajuato, Mexico, during September 21–25, 2009. This was the twentieth IWOTA; in fact, the workshop was held biannually since 1981, and annually in the recent years (starting 2002) rotating among eleven countries on three continents. Previous IWOTA meetings were held at:

Santa Monica, CA, USA (1981)

J.W. Helton, Chair

Rehovot, Israel (1983) – *Oper. Theory Adv. Appl.* 12;

H. Dym and I. Gohberg, Co-chairs

Amsterdam, Netherlands (1985) – *Oper. Theory Adv. Appl.* 19;

M.A. Kaashoek, Chair

Mesa, AZ, USA (1987) – *Oper. Theory Adv. Appl.* 35;

J.W. Helton and L. Rodman, Co-chairs

Rotterdam, Netherlands (1989) – *Oper. Theory Adv. Appl.* 50;

H. Bart, Chair

Sapporo, Japan (1991) – *Oper. Theory Adv. Appl.* 59;

T. Ando, Chair

Vienna, Austria (1993) – *Oper. Theory Adv. Appl.* 80;

H. Langer, Chair

Regensburg, Germany (1995) – *Oper. Theory Adv. Appl.* 102 and 103;

R. Mennicken, Chair

Bloomington, IN, USA (1996) – *Oper. Theory Adv. Appl.* 115;

H. Bercovici and C. Foiaş, Co-chairs

Groningen, Netherlands, (1998) – *Oper. Theory Adv. Appl.* 124;

A. Dijksma, Chair

Bordeaux, France (2000) – *Oper. Theory Adv. Appl.* 129;

N. Nikolskii, Chair

Faro, Portugal (2000) – *Oper. Theory Adv. Appl.* 142;

A.F. Dos Santos and N. Manojlovic, Co-chairs

Blacksburg, VA, USA (2002) – *Oper. Theory Adv. Appl.* 149;  
 J. Ball, Chair  
 Cagliari, Italy (2003) – *Oper. Theory Adv. Appl.* 160;  
 S. Seatzu and C. van der Mee, Co-chairs  
 Newcastle, UK (2004) – *Oper. Theory Adv. Appl.* 171;  
 M.A. Dritshel and N. Young, Co-chairs  
 Storrs, CT, USA (2005) – *Oper. Theory Adv. Appl.* 179;  
 V. Olshevsky, Chair  
 Seoul, Korea (2006) – *Oper. Theory Adv. Appl.* 187;  
 Woo Young Lee, Chair  
 Potchefstroom, South Africa (2007) – *Oper. Theory Adv. Appl.* 195;  
 K. Grobler and G. Groenewald, Co-chairs  
 Williamsburg, VA, USA, (2008) – *Oper. Theory Adv. Appl.* 202 and 203;  
 L. Rodman, Chair  
 Guanajuato, Mexico (2009) – *Oper. Theory Adv. Appl.* 220;  
 N. Vasilevski, Chair  
 Berlin, Germany (2010) – *Oper. Theory Adv. Appl.* 221;  
 J. Behrndt, K.-H. Förster and C. Trunk, Co-chairs  
 Seville, Spain (2011)  
 A. Montes Rodríguez, Chair.

Consistent with the topics of recent IWOTA meetings, IWOTA 2009 was designed as a comprehensive, inclusive conference covering all aspects of theoretical and applied operator theory, ranging from classical analysis, differential and integral equations, complex and harmonic analysis to mathematical physics, mathematical systems and control theory, signal processing and numerical analysis. The conference brought together international experts for a week-long stay at Hotel Real de Minas, in an atmosphere conducive to fruitful professional interactions. These Proceedings reflect the high quality of the papers presented at the conference. In addition to fourteen plenary sessions, IWOTA 2009 included the following special sessions:

- Bergman and Segal-Bargmann spaces and Toeplitz operators
- Factorization problems, Wiener-Hopf and Fredholm operators
- Hypercomplex operator theory
- Indefinite inner product spaces and spectral problems
- Multivariable operator theory
- Operators on function spaces
- Pseudodifferential operators and related topics
- Solution techniques for partial differential equations
- Spectral theory and its applications
- Toeplitz/rank structured tensors and matrices.

This volume contains twenty-one solicited articles by speakers at the workshop, ranging from expository surveys to original research papers, each carefully refereed. All contributions reflect recent developments in operator theory and its applications.

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