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Preface

This book contains Proceedings of the international conference “2022 Combinatorics, Computing, Group Theory and Applications in South Florida” (CCGTA in South Fla) held in Deerfield beach, Florida, August 14-21, 2022 in honor of the 70-th birthday of Daniela Nikolova-Popova.

<https://sites.google.com/view/ccgtainsouthfla/home>

The event was organized by Florida Atlantic University, sponsored by NSF, partially supported by ICA (Institute of Combinatorics and its Applications), and in cooperation with the Universities of Salerno and L’Aquila, Italy.

The Scientific Committee for the conference consisted of D. Nikolova (Chairperson) - FAU, Patrizia Longobardi - University of Salerno, Carlo Maria Scoppola - University of L’Aquila, Ted Hurley - National University of Ireland – Galway, and Delaram Kahrobaei – CUNY, USA.

The conference was hybrid – in person, and online. There were 47 regular participants from: USA, Canada, Europe (UK, Ireland, Germany, Switzerland, Italy, Malta, Croatia), South Africa, Australia, Israel, and India, and also an unknown number who followed various parts online.

The purpose of the conference was to bring together experts in group theory, combinatorics, and computing to discuss computational, algorithmic, and application aspects that have recently merged at the interface between these areas. These areas are now fundamental to modern communications and their advancement has value for the economy, and for the ongoing need to update our undergraduate and postgraduate programs related to these important developments. This meeting was helpful to establish a scientific network among the participating universities and research centers from 5 continents.

The conference had 6 working days, and included one-hour invited lectures, and twenty-minute contributed talks. Two special sessions were organized: The first showcased contributions of women mathematicians, and the second was devoted to young researchers. There was a poster session as well for young researchers.

The volume contains articles from international experts in group theory and combinatorics. The contributions cover topics ranging from combinatorial group theory to graph theory, signal processing, coding theory, finite groups, and related areas in communications, computing, and cryptography. The articles are particularly useful for any advanced undergraduate student or new postgraduates wishing to acquire background material for projects or research.

It is our pleasure to thank the speakers and participants who made this conference a great success, and the referees for their effective and accurate work. Special thanks go to our webmasters: Carmine Monetta, and Marialaura Noce from the University of Salerno, Italy. The organizers also thank Florida Atlantic University for helping with the project.

The organizers are deeply indebted to the NSF for making this conference possible through their financial support.

Editors: Daniela Nikolova, Patrizia Longobardi, Carlo Maria Scoppola