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Autore	Galaz-Garcia Fernando
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Nota di contenuto	Cover -- Title page -- Contents -- Preface -- List of Talks and

Speakers -- A survey on extensions of Riemannian manifolds and Bartnik mass estimates -- 1. Mathematical relativity -- 2. The Mantoulidis-Schoen construction -- 3. Collar extensions, gluing procedures, and Bartnik mass estimates -- 4. Recent results on Bartnik mass estimates -- 5. Conclusions and open problems -- Acknowledgments -- References -- Four-dimensional homogeneous Kähler Ricci solitons -- 1. Introduction -- 2. Preliminaries -- 3. Homogeneous Kähler surfaces. The proof of Theorem 1.1 -- 4. The proof of Corollary 1.2 -- References -- *-algebras and their nuclear dimension -- Introduction -- 1. Basics of *-algebras -- 2. Nuclear dimension -- 3. Zero dimensional objects -- 4. *-algebras associated to groups -- 5. *-algebras associated to dynamical systems -- 6. Cuntz algebras -- 7. General simple *-algebras -- 8. Nuclear dimension of commutative algebras -- Acknowledgments -- References -- Short survey on the existence of slices for the space of Riemannian metrics -- 1. Introduction -- 2. Preliminaries -- 3. Proofs of the Slice Theorem and Theorem B -- 4. Consequences of the Slice Theorem -- Acknowledgment -- References -- Model theory and metric convergence II: Averages of unitary polynomial actions -- Introduction -- 1. PET structures -- 2. Leibman sequences -- 3. An ergodic theorem for unitary polynomial actions of -- 4. A Mean Ergodic Theorem for unitary polynomial actions of abelian groups -- Appendix A. A Dominated Convergence Theorem for notions of integration in Banach spaces -- Acknowledgments -- References -- A survey on the blow-up method for fast-slow systems -- 1. Introduction -- Notation -- 2. Preliminaries -- 3. Survey -- 4. Summary and outlook -- Acknowledgments -- References -- Langlands program and Ramanujan Conjecture: A survey -- Introduction.
1. Artin -functions and number theory -- 2. Reductive groups and representation theory -- 3. The Langlands-Shahidi method -- 4. Local Langlands -- 5. Global Langlands -- 6. Globalization methods -- 7. Ramanujan Conjecture -- Acknowledgments -- References -- The least quadratic non-residue -- 1. Introduction -- 2. History and heuristics -- 3. The Pólya-Vinogradov inequality -- 4. The Burgess inequality -- 5. Explicit results on the least quadratic non-residue -- 6. The large sieve and Linnik's theorem -- 7. Ankeny's Theorem -- 8. Conclusion -- Acknowledgments -- References -- Thin homotopy and the holonomy approach to gauge theories -- 1. Introduction -- 2. Brief survey -- 3. Thin homotopy and groups of based loops on a manifold -- 4. Results -- 5. Conclusion and further remarks -- Acknowledgments -- References -- On fractional higher-order Dirichlet boundary value problems: Between the Laplacian and the bilaplacian -- 1. Introduction -- 2. Pointwise evaluations -- 3. Variational framework -- 4. Positivity preserving properties -- 5. Explicit formulas for the inhomogeneous Dirichlet problem in balls -- 6. Asymptotic behavior of solutions -- Appendix A. On the composition of Green functions -- Acknowledgments -- References -- ^{1} solutions on curve integrable spacetimes -- 1. Introduction -- 2. Preliminaries and notation -- 3. Curve integrable spacetimes -- Acknowledgments -- References -- On the pseudospectra of Schrödinger operators on Zoll manifolds -- 1. Introduction and statement of results -- 2. Proof of Theorem 1.2 -- 3. Proof of Theorem 1.3 -- 4. Proof of Theorem 1.4 -- 5. Examples on ^{2} -- References -- On a conjecture of Naito-Sagaki: Littelmann paths and Littlewood-Richardson Sundaram tableaux -- Introduction -- 1. Notation for the Lie algebras -- 2. Tableaux, words and their paths -- 3. Restriction of paths that come from words.
4. The Naito-Sagaki conjecture -- 5. Littlewood-Richardson tableaux and n-symplectic Sundaram tableaux: branching -- 6. On the proof of

	the Naito-Sagaki conjecture -- 7. Symplectic combinatorics of King, Berele and Sundaram -- Acknowledgments -- References -- Back Cover.
Sommario/riassunto	Articles in this volume are based on presentations given at the IV Meeting of Mexican Mathematicians Abroad (IV Reunión de Matemáticos Mexicanos en el Mundo), held from June 10-15, 2018, at Casa Matemática Oaxaca (CMO), Mexico. This meeting was the fourth in a series of ongoing biannual meetings bringing together Mexican mathematicians working abroad with their peers in Mexico.This book features surveys and research articles from five broad research areas: algebra, analysis, combinatorics, geometry, and topology. Their topics range from general relativity and mathematical physics to interactions between logic and ergodic theory. Several articles provide a panoramic view of the fields and problems on which the authors are currently working on, showcasing diverse research lines complementary to those currently pursued in Mexico. The research-oriented manuscripts provide either alternative approaches to well-known problems or new advances in active research fields.