

Contents

| | |
|---|-----|
| Preface | vii |
| Program of the conference | xi |
| Conference participants | xv |
| Some results on global real analytic geometry FRANCESCA ACQUISTAPACE, FABRIZIO BROGLIA, and JOSÉ F. FERNANDO | 1 |
| Dimension in the realm of transseries MATTHIAS ASCHENBRENNER, LOU VAN DEN DRIES, and JORIS VAN DER HOEVEN | 23 |
| Stability index of algebras with involution VINCENT ASTIER and THOMAS UNGER | 41 |
| Efficient algorithms for computing the Euler-Poincaré characteristic of symmetric semi-algebraic sets SAUGATA BASU and CORDIAN RIENER | 51 |
| Gram spectrahedra LYNN CHUA, DANIEL PLAUMANN, RAINER SINN, and CYNTHIA VINZANT | 81 |
| Constructions in the category of real semigroups MAX DICKMANN, FRANCISCO MIRAGLIA, and ALEJANDRO PETROVICH | 107 |
| Recent progress on definability of Henselian valuations ARNO FEHM and FRANZISKA JAHNKE | 135 |
| Polynomial, regular and Nash images of Euclidean spaces JOSÉ F. FERNANDO, JOSÉ M. GAMBOA, and CARLOS UENO | 145 |
| Witt equivalence of fields: A survey with a special emphasis on applications of hyperfields PAWEŁ GŁADKI | 169 |
| Infinite dimensional moment problem: open questions and applications MARIA INFUSINO and SALMA KUHLMANN | 187 |
| A new proof for the existence of degree bounds for Putinar's Positivstellensatz TOM-LUKAS KRIEL | 203 |

| | |
|--|-----|
| Coincidence point theorems for ball spaces and their applications FRANZ-VIKTOR KUHLMANN, KATARZYNA KUHLMANN, and FATMA SONAALLAH | 211 |
| Valuation theory of exponential Hardy fields II: Principal parts of germs in the Hardy field of o-minimal exponential expansions of the reals FRANZ-VIKTOR KUHLMANN and SALMA KUHLMANN | 227 |
| Théories géométriques pour l'algèbre des nombres réels HENRI LOMBARDI and ASSIA MAHBOUBI | 239 |
| Surreal numbers with derivation, Hardy fields and transseries: a survey VINCENZO MANTOVA and MICKAËL MATUSINSKI | 265 |
| Polynomials nonnegative on the cylinder CLAUS SCHEIDERER and SEBASTIAN WENZEL | 291 |
| Positive semifields and their ideals NIELS SCHWARTZ | 301 |
| On the strength of some topological lattices MARCUS TRESSL | 325 |
| On the local geometry of definably stratified sets DAVID TROTMAN and GUILLAUME VALETTE | 349 |