

## Contents

|              |      |
|--------------|------|
| Preface      | ix   |
| Bibliography | xiii |

### Applications

|   |     |
|---|-----|
| Generalized integrals of Macdonald and Gegenbauer functions<br>JAN DEREZIŃSKI, CHRISTIAN GASS, and BŁAŻEJ RUBA  | 3   |
| On potentials integrated by the Nikiforov–Uvarov method<br>LINA ELLIS, IKUMI ELLIS, CHRISTOPH KOUTSCHAN,<br>and SERGEI K. SUSLOV                                      | 43  |
| On the Mellin symbol of singular integral operators associated with the<br>biharmonic equation in infinite sectors<br>JEONGSU KYEONG, IRINA MITREA, and KATHARINE OTT | 97  |
| Gravitational potentials of ellipsoidal masses<br>NORMAN LEBOVITZ   | 125 |
| Spherical distributions on the de Sitter space and their spectral singularities<br>ISWARYA SITIRAJU   | 177 |

### $q$ -extensions

|  |     |
|--|-----|
| The surprising first $q$ -Appell function<br>GEORGE E. ANDREWS   | 191 |
| Ramanujan's $q$ -continued fractions<br>GAURAV BHATNAGAR   | 199 |
| Orthogonality of the big $-1$ Jacobi polynomials for non-standard parameters<br>HOWARD S. COHL and ROBERTO S. COSTAS-SANTOS                                | 221 |
| On an identity of Chaundy and Bullard. III. Basic and elliptic extensions<br>NATSUKO HOSHI, MAKOTO KATORI, TOM H. KOORNWINDER,<br>and MICHAEL J. SCHLOSSER | 233 |
| Generalizations of some $q$ -product identities of Ramanujan and others<br>TIMOTHY HUBER, JAMES MC LAUGHLIN, and DONGXI YE                                 | 255 |

|   |     |
|---|-----|
| Discrete orthogonality of the polynomial sequences in the $q$ -Askey scheme<br>LUIS VERDE-STAR  | 269 |
| A new three-term relation for an indefinite sum of a very well poised basic<br>hypergeometric series<br>JIANAN XU, YING ZHANG, and XINRONG MA | 289 |