

Gasper, George; Rahman, Mizan**Basic hypergeometric series. 2nd ed.** (English) Zbl 1129.33005**Encyclopedia of Mathematics and Its Applications** 96. Cambridge: Cambridge University Press (ISBN 0-521-83357-4/hbk). xxvi, 428 p. (2004).

From the text: This revised and expanded new edition will surely continue to meet the needs for an authoritative, up-to-date, self contained, and comprehensive account of the rapidly growing field of basic hypergeometric series, or q -series. Simplicity, clarity, deductive proofs, thoughtfully designed exercises, and useful appendices are among its strengths. The first five chapters cover basic hypergeometric series and integrals, whilst the next five are devoted to applications in various areas including Askey-Wilson integrals and orthogonal polynomials, partitions in number theory, multiple series, orthogonal polynomials in several variables, and generating functions.

Chapters 9-11 are new for the second edition, the final chapter containing a simplified version of the main elements of the theta and elliptic hypergeometric series as a natural extension of the single-base q -series.

Some sections and exercises have been added to reflect recent developments, and the Bibliography has been revised to maintain its comprehensiveness.

For the review of the first edition see [Zbl 0695.33001](#).

Reviewer: [Olaf Ninnemann \(Berlin\)](#)

MSC:

- [33Dxx](#) Basic hypergeometric functions
- [33-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to special functions
- [33-02](#) Research exposition (monographs, survey articles) pertaining to special functions
- [05A30](#) q -calculus and related topics
- [05E35](#) Orthogonal polynomials (combinatorics) (MSC2000)

Cited in **8** Reviews
Cited in **706** Documents