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Special Functions
of Mathematical Physics

A unified introduction with applications
Translated by R. P. Boas

This presentation of the most important special functions is developed from a unified, simple point of view, based on a single formula, the Rodrigues formula. The volume takes a unified approach to the whole family of special functions, and is the most comprehensive treatment yet available in book form, with a considerable amount of very recent material on orthogonal polynomials of a discrete variable and some of their applications in physics. Applications include most of the explicitly solvable problems of elementary quantum mechanics and problems about laser sounding of the atmosphere, compression of information, smoothing of data as well as numerical integration. An appendix in compact form, which serves as a condensed handbook, gives all the basic formulas and main properties of the most important special functions.
This volume is an excellent handbook for physicists, engineers, and applied mathematicians who wish to use these functions in a practical way.

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