Series Representations and Generating Functions of Special Functions with Mathematica

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Abstract

In this talk the Mathematica package *SpecialFunctions* is introduced [6], [9]. Algorithms to convert between power series representations and their generating functions is the main topic of this package [1] – [9], including the work with orthogonal polynomials and special functions. The package automatically finds differential and recurrence equations [7], [8], and calculates power series representations and generating functions. As an application the fast calculation of polynomial approximations of solutions of linear differential equations with polynomial coefficients is presented.

References

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