Symbolic computation of Mehler-Heine asymptotics for Sobolev-type orthogonal polynomials

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In this poster we tackle the Mehler-Heine formulae for Sobolev-type orthogonal polynomials. We present the theoretical results and an algorithm to compute these formulae effectively. The algorithm allows us to construct a computer program based on Mathematica® language, where the corresponding Mehler-Heine formulae are automatically obtained. Applications and examples show the efficiency of the approach developed.

These results have been published in [1] and the Mathematica® code is available for free in [2].

[1] Sobolev orthogonal polynomials: asymptotics and symbolic computation, J. F. Mañas-Mañas, J. J. Moreno-Balcázar, East Asian J. Appl. Math. 12(3), 535-563, 2022.

[2] Notebook Archive (2022), https://notebookarchive.org/2022-06-amlp3fh

Joint work with Juan F. Mañas-Mañas (Universidad de Almería, Spain).