

Optimal averaged Padé approximants

D.Lj. Djukić¹, R.M. Mutavdžić Djukić¹, L. Reichel², and M.M. Spalević¹

¹ Faculty of Mechanical Engineering, University of Belgrade, Kraljice Marije 16
11000 Belgrade, Serbia

`{ddjukic,rmutavdzic,mspalevic}@mas.bg.ac.rs`

² Department of Mathematical Sciences, Kent State University, Kent, OH 44242,
USA

`reichel@math.kent.edu`

Abstract. Padé-type approximants are rational functions of fixed degrees that approximate a given formal power series. It is well-known that the most accurate such approximants are related to the Gauss quadrature. Boutry [1] constructs a Padé-type approximant that corresponds to the anti-Gaussian quadrature and consequently to the averaged Gaussian quadrature. An alternative to this quadrature is the optimal averaged Gaussian quadrature [7], with a higher degree of precision. Here we give a construction of a Padé-type approximant that corresponds to the optimal averaged Gaussian quadrature and describe some of its properties.

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