

## HERMITE–HADAMARD–TYPE INEQUALITIES FOR RADAU–TYPE QUADRATURE RULES

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*Abstract.* Hermite-Hadamard-type inequalities are given for Radau-type quadrature rules and  $k$ -convex functions (where  $k = 2, 3, 5$ ). Furthermore, the best possible error estimates for the Radau-type quadrature rules and functions with low degree of smoothness are obtained.

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### REFERENCES

- [1] M. ABRAMOWITZ AND I. A. STEGUN (EDS), *Handbook of mathematical functions with formulae, graphs and mathematical tables*, National Bureau of Standards, Applied Math. Series 55, 4th printing, Washington, 1965.
- [2] M. BESSENYEI, *Hermite-Hadamard-type inequalities for generalized convex functions*, Ph.D. dissertation (2005), *Journal of Inequal. in Pure and Appl. Math.*, **9**, 3 (2008), art.63, 51pp.
- [3] M. BESSENYEI, Z. PÁLES, *Higher-order generalizations of Hadamard's inequality*, *Publ. Math. Debrecen*, **61**, 3-4 (2002), 623-643.
- [4] P. J. DAVIS, P. RABINOWITZ, *Methods of Numerical Integration*, New York, 1975.
- [5] LJ. DEDIĆ, M. MATIĆ, J. PEČARIĆ, *On generalizations of Ostrowski inequality via some Euler-type identities*, *Math. Inequal. Appl.*, **3**, 3 (2000), 337–353.
- [6] V. I. KRYLOV, *Approximate calculation of integrals*, Macmillan, New York-London, 1962.