INEQUALITIES OF HERMITE-HADAMARD TYPE FOR CONVEX FUNCTIONS WHICH ARE *n*-TIMES DIFFERENTIABLE

Shu-Hong Wang and Feng Qi

Abstract. In the paper, by creating an integral identity and using Hölder's inequality, the authors establish some new inequalities of Hermite-Hadamard type for n-times differentiable convex functions.

Mathematics subject classification (2010): Primary 26D15; Secondary 26D20, 41A55, 41A99. *Keywords and phrases*: Hermite-Hadamard's inequality, convex function, integral identity, Hölder's inequality.

REFERENCES

- U. S. KIRMACI, Inequalities for differentiable mappings and applications to special means of real numbers to midpoint formula, Appl. Math. Comput. 147 (2004), no. 1, 137–146, available online at http://dx.doi.org/10.1016/S0096-3003(02)00657-4.
- [2] C. E. M. PEARCE AND J. PEČARIĆ, Inequalities for differentiable mappings with application to special means and quadrature formulae, Appl. Math. Lett. 13 (2000), no. 2, 51–55, available online at http://dx.doi.org/10.1016/S0893-9659(99)00164-0.
- [3] F. QI, T.-Y. ZHANG, AND B.-Y. XI, Hermite-Hadamard type integral inequalities for functions whose first derives are of convexity, available online at http://arxiv.org/abs/1305.5933.
- [4] M. Z. SARIKAYA AND N. AKTAN, On the generalization of some integral inequalities and their applications, available online at http://arxiv.org/abs/1005.2897.
- [5] M. Z. SARIKAYA, E. SET, AND M. E. ÖZDEMIR, On new inequalities of Simpson's type for convex functions, RGMIA Res. Rep. Coll. 13 (2010), no. 2, Art. 2, available online at http://rgmia.org/v13n2.php.

