REFINEMENTS OF CAUCHY–SCHWARZ NORM INEQUALITY

JUNMIN HAN AND JIAN SHI

Abstract. In this paper, we utilize the convexity of the function
\[ f(\nu) = \|A^{1/2} (A^{1/2} - \nu) (A^{1/2} - \nu)^* A^{1/2} \| \cdot \|A^{1/2} (A^{1/2} - \nu) (A^{1/2} - \nu)^* A^{1/2} \| \]
and the Hermite–Hadamard inequality to obtain a family of new refinements of Cauchy–Schwarz norm inequality for operators, which extends the related results.


Keywords and phrases: Cauchy–Schwarz norm inequality, Hermite–Hadamard inequality, Heinz inequality, convex functions.

REFERENCES