SOME NEW SCALES OF REFINED HARDY TYPE INEQUALITIES VIA FUNCTIONS RELATED TO SUPERQUADRACITY

S. ABRAMOVICH AND L.-E. PERSSON

Abstract. For the Hardy type inequalities the “breaking point” (= the point where the inequality reverses) is \( p = 1 \). Recently, J. Oguntoase and L. E. Persson proved a refined Hardy type inequality with a breaking point at \( p = 2 \). In this paper we prove a new scale of refined Hardy type inequality which can have a breaking point at any \( p \geq 2 \). The technique is to first make some further investigations for superquadratic and superterzatic functions of independent interest, among which, a new Jensen type inequality is proved.


Keywords and phrases: Inequalities, refined Hardy type inequalities, scales, superquadratic functions, superterzatic functions, Jensen type inequalities.

REFERENCES