

Normability property of functional spaces defined by rearrangements

Abstract: We review the most recent developments of the normability property for some rearrangement invariant spaces (the weighted Lorentz spaces.) This theory started in the 1960's with the pioneering work of Lorentz, and has been a very active area of research, especially during the last decade. The basic tool used for the solution of these problems involves the so called weighted Hardy's inequalities for monotone functions. The main result that we will present in this talk is the relationship between the boundedness of the Hardy operator, geometric conditions on the weights, and functional properties on the spaces considered. We will also mention some open problems related to the multidimensional extension of this theory.