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End-Point Norm Estimates for Cesàro and Copson Operator

Abstract

For a large class of operators acting between weighted l^∞ spaces, exact formulas are given for their norms and the norms of their restrictions to the cones of non-negative sequences; non- negative, non-increasing sequences; and non-negative, non-decreasing sequences. The weights involved are arbitrary nonnegative sequences and may differ in the domain and codomain spaces. The results are applied to the Cesáro and Copson operators, giving their norms and their distances to the identity operator on the whole space and on the cones. Simplifications of these formulas are derived in the case of these operators acting on power-weighted l^∞. As an application, best constants are given for inequalities relating the weighted l^∞ norms of the Cesáro and Copson operators both for general weights and for power weights.