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Norms of Certain Operators on Weighted ℓ_pSpaces and Lorentz Sequence Spaces

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Abstract: The problem addressed is the exact determination of the norms of the classical Hilbert, Copson and averaging operators on weighted ℓ_p spaces and the corresponding Lorentz sequence spaces $d(w,p)$, with the power weighting sequence $w_n = n^{-\alpha}$ or the variant defined by $w_1 + \cdots + w_n = n^{1-\alpha}$. Exact values are found in each case except for the averaging operator with $w_n = n^{-\alpha}$, for which estimates deriving from various different methods are obtained and compared.