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Sharp Carlson Type Inequalities with Many Weights

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Abstract—The paper is concerned with sharp Carlson type inequalities of the form

$$\|w(\cdot)x(\cdot)\|_{L_q(T)} \le K\|w_0(\cdot)x(\cdot)\|^{\gamma}_{L_p(T)} \max_{1\le j\le n} \|w_j(\cdot)x(\cdot)\|^{1-\gamma}_{L_r(T)},$$

where T is a cone in $\mathbb{R}^d$ and the weight functions $w_j(\cdot)$, $j = 1, \dots, n$, are homogeneous with some symmetry property.

Keywords: Carlson type inequalities, sharp constants.

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