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BLEI'S INEQUALITY AND COORDINATEWISE MULTIPLE SUMMING OPERATORS

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Abstract: Two inequalities resembling the multilinear Hölder inequality for mixed-norm Lebesgue spaces are proved. When specialized to single-function inequalities they include a pair of inequalities due to Blei and a recent extension of Blei's inequality. The first of these inequalities is applied to give explicit indices in a known result for coordinatewise multiple summing operators. The second is used to prove a complementary result to the known one, again with explicit indices. As an application of the complementary result, a sufficient condition is given for a composition of operators to be multiple summing.

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