

DIRECTIONAL OPERATORS AND MIXED NORMS

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Dedicated to the memory of Chicho Guadalupe, a friend of many of us

Abstract

We present a survey of mixed norm inequalities for several directional operators, namely, directional Hardy-Littlewood maximal functions and Hilbert transforms (both appearing in the method of rotations of Calderón and Zygmund), X -ray transforms, and directional fractional operators related to Riesz type potentials with variable kernel. In dimensions higher than two several interesting questions remain unanswered.

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Key words. Directional Hardy-Littlewood maximal functions, directional Hilbert transform, X -ray transform, mixed norms, potentials.

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