Hardy-Littlewood-Sobolev inequalities for homogeneous differential operators

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Abstract. In this lecture we present a new characterization of Hardy-Littlewood-Sobolev inequalities in $L^1$ norm for homogeneous linear differential operators with constant coefficients. Variants and applications are presented, in particular a version of $L^1$ Stein-Weiss inequality for vector fields.

This is joint work with Jorge Hounie (UFSCar - Brazil) and (working in progress) with Pablo De Nápoli (UBA - Argentine).