

SHARP HARDY-LERAY INEQUALITIES FOR CURL-FREE VECTOR FIELDS

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ABSTRACT. We are concerned with the sharp Hardy-Leray inequalities for curl-free vector fields $u \in C_0^\infty(\mathbb{R}^N)^N$. The result complements the former work by Costin-Maz'ya on the sharp Hardy-Leray inequalities for the axisymmetric divergence-free vector fields. The sharp Rellich-Leray inequalities for curl-free vector fields are also shown.

This talk is based on a joint work with N. Hamamoto (Osaka City Univ.).

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