Insalate di Matematica

presents

The Calderón-Zygmund inequality on Riemannian manifolds

Ludovico Marini
Università degli Studi di Milano-Bicocca

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Abstract

The L^p-Calderón–Zygmund inequality $(CZ(p))$ is a global second order regularity estimate for the solution of the Poisson equation. While $CZ(p)$ always holds on $\mathbb{R}^n$, in a Riemannian setting some geometric assumptions are needed. In this talk, we will present some existence results, show the relation of $CZ(p)$ to other regularity estimates and discuss its role in proving the equivalence of different notions of Sobolev spaces. Finally, we will sketch how to use singular metric spaces in order to produce some new smooth counterexamples.

Keywords:
Global regularity estimates · Sobolev spaces on manifolds · Singular metric spaces · Positive sectional curvature

"Obvious" is the most dangerous word in mathematics. - Eric Temple Bell