

COLÓQUIOS 2015
DEPARTAMENTO DE MATEMÁTICA

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FALARÁ SOBRE

**Characterizing Lyapunov Domains via Riesz
Transforms on Hölder Spaces**

Under mild geometric measure theoretic assumptions on an open set $\Omega \subset \mathbb{R}^n$, we show that the Riesz transforms on its boundary are continuous mappings on the Hölder space $\mathcal{C}^\alpha(\partial\Omega)$ if and only if Ω is a Lyapunov domain of order α (i.e., a domain of class $\mathcal{C}^{1+\alpha}$). In the category of Lyapunov domains we also establish the boundedness on Hölder spaces of singular integral operators with kernels of the form $P(x-y)/|x-y|^{n-1+l}$, where P is any odd homogeneous polynomial of degree l in \mathbb{R}^n . This family of singular integral operators, which may be thought of as generalized Riesz transforms, includes the boundary layer potentials associated with basic PDE's of mathematical physics, such as the Laplacian, the Lamé system, and the Stokes system.

Quinta-feira, 13 de agosto
16 horas

Departamento de Matemática
Auditório