

# SEMINARIO DE ANÁLISIS Y APLICACIONES

Viernes, 21 de febrero de 2020

11:30 h., [Aula Naranja](#) (ICMAT)

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Strictly singular operators between  $L^p$   
spaces

## Resumen:

Recall that an operator between Banach spaces is strictly singular provided it is not invertible when restricted to any (closed) infinite dimensional subspace. The class of strictly singular operators forms a closed two-sided operator ideal, containing compact operators, and was introduced by T. Kato in connection with the perturbation theory of Fredholm operators. In this talk we will focus on the interpolation properties of this class of operators acting between different  $L^p$  spaces, and the structure of strictly singular non-compact operators. In particular, by means of Riesz potential operators acting between measure spaces of different Hausdorff dimension, we will see that the set of pairs  $(1/p, 1/q)$  such that an operator is strictly singular but not compact from  $L^p$  to  $L^q$  can contain a line segment of any positive slope. The talk is based on joint work with F. L. Hernández and E. M. Semenov.

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