

## Mathematical Colloquia

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**Monday, 04 November 2019**

17:15 h, Lecture Room 119

**Prof. Dr. Giuseppe Buttazzo, University of Pisa**

# Relations between torsional rigidity and principal eigenvalue

**ABSTRACT:** The relations between principal eigenvalue of the Laplace operator in a domain  $\Omega$ , with Dirichlet boundary conditions, and torsional rigidity, that is  $\int_{\Omega} u \, dx$  where  $u$  solves  $-\Delta u = 1$  in  $\Omega$  with zero trace on the boundary, are studied in the class of general domains, convex domains, and domains with a small thickness. This is of help to provide some bounds for the Blaschke-Santaló diagram of the two quantities. This is an ongoing research with Michiel van den Berg (Bristol) and Aldo Pratelli (Pisa).