

Mathematical Colloquia

Monday, 13 November 2017

17:15 h, Lecture Room B 78

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Extending Sobolev functions from Euclidean domains

Abstract:

When are Sobolev functions defined on a subset of the Euclidean space extendable to the whole space without increasing the Sobolev norm by more than a constant multiplicative factor? Partial answers to this question have been given by various people. For example, from the works of Calderón (1961) and Stein (1970) we know that Lipschitz domains have this property. More generally, this holds also for all uniform domains as was later shown by Jones in 1981.

In this talk, we will look at how the geometry of the domain affects the extendability of Sobolev functions. We will concentrate on the Euclidean plane where in the case of bounded simply connected domains a full characterization of the domains can be given.