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Traces and extensions of Sobolev functions in metric measure spaces

In smooth Euclidean domains, it is known that Sobolev functions admit traces to the boundary that are in an appropriate Besov class and, vice versa, Besov functions on the boundary admit extensions that are Sobolev in the domain. All of these concepts make sense in the setting of a metric measure space, where the geometry of the space, as manifested in the existence of well behaved curves, plays a key role. In this talk, we will discuss recent work on generalizing the known trace and extension results to unbounded domains. This work, joint with Riikka Korte and Nageswari Shanmugalingam, arose in connection to the study of Dirichlet problems for the p -Laplacian on unbounded uniform domains in metric measure spaces.