

# Sharp geometric conditions for Sobolev extension operators

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It is a classical question in the theory of Sobolev spaces on which open sets it is possible to construct a linear extension operator for corresponding Sobolev spaces. Easy examples such as a ball with a slit show that such a construction is not always possible. However, in the literature there were given many sufficient conditions, like boundaries that are sufficiently smooth or Jones' Epsilon-Delta-condition, under which the question can be answered in the affirmative. To the contrary, if we only consider Sobolev spaces of functions with a (vanishing) Dirichlet boundary condition, extension by zero is possible, which requires no geometric quality at all. In this talk, it is our goal to investigate Sobolev spaces of functions that vanish only on a part of the boundary, and we will present conditions that allow to construct a Sobolev extension operator in this constellation that are sharp at the interface between the two boundary parts.