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Traces of Function with Bounded Variations

We are interested in variational problems with linear growth. In this setting it is natural to work with functions of bounded variations, where the distributional gradient is just a Radon measure. In our setting we are interested in the situation, where not the full gradient is at hand, but only some part of it. This could for example be the symmetric part of the gradient or even its tracefree part. So given a differential operator of first order, we define the corresponding Sobolev space and its space of bounded variation. Furthermore, we study the (boundary) traces of such functions. We will see that traces exist in L^1 if and only if the operator is $\mathbb{C}$-elliptic. This allows, to solve the existence problem to the variational problem with linear growth.
This is a joint project with Dominic Breit (Edinburgh) and Franz Gmeineder (Oxford).