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Melissa Meinert* (mmeinert@math.uni-bielefeld.de). *Sobolev spaces and calculus of variations on fractals.*

In this talk, we will review p -energies and $(1, p)$ -Sobolev spaces for fractals and metric measure spaces that carry a local Dirichlet form. These Sobolev spaces are then used to generalize some basic results from the calculus of variations, such as the existence of minimizers of convex functionals.

Under certain conditions, we will present regularity results for weak solutions of nonlinear equations and systems that do not need any continuity of coefficients.

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