## Local and nonlocal methods in geometric analysis



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## About some approximation problems for Sobolev maps to manifolds.

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In a striking contrast with the classical case of real-valued Sobolev function, a Sobolev map with values into a given compact manifold N need not be approximable with smooth N-valued maps.

This observation, initially due to Schoen and Uhlenbeck (1983), gave rise to a whole area of research concerned with questions related to approximability properties of Sobolev mappings with values into a compact manifold. In this talk, I will give a broad overview of this research direction, its history, the main problems it is concerned with, important known results, as well as some recent contributions.

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