

## CONSTRUCTION OF HARMONIC MAPS

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**Abstract:** Geometric variational problems frequently lead to analytically extremely hard, non-linear partial differential equations, where the standard methods fail. Thus finding non-trivial solutions is challenging. The idea is to study solutions with a certain minimum level of symmetry (i.e. group actions with low cohomogeneity), and use the symmetry to reduce the original problem to systems of non-linear ordinary differential equations, typically with singular boundary values. In my talk I explain how to construct harmonic mappings between manifolds with a lot of symmetry (i.e. cohomogeneity one manifolds). If time permits, I will discuss applications of the developed methods.