

COMPACTNESS AND EXISTENCE OF PRESCRIBED MEAN CURVATURE SURFACES OF ARBITRARY CODIMENSIONS

Speaker: Rui Gao
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Time: Mon, March 31st, 10:30 - 11:30

Venue: Room 106, SCMS

Abstract:

Constant Mean Curvature (CMC) and Prescribed Mean Curvature (PMC) surfaces are pivotal in diverse fields including mathematics, physics, and biology. They arise naturally in partitioning problems, isoperimetric problems, general relativity, two-phase interface problems, tissue growth etc. Despite the well-established existence theory for CMC and PMC hypersurfaces, constructing closed surfaces with prescribed mean curvature vector, admitting prescribed topology and controlled Morse index in general n -dimensional compact Riemannian manifold remains elusive. In this talk, we will outline our recent advancements in the compactness and existence theory for PMC surfaces with arbitrary codimensions, contributing to a supplement of such area. This talk is based on the joint work with Prof. Miaomiao Zhu.