LEVEL SET METHODS AND HARMONIC FUNCITONS

Speaker: Xuan Yao
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Time: Thur, Jun 19th; 14:30-15:20pm
Venue: Room 102, SCMS

Abstract:

In 2019, Daniel Stern established a key identity for harmonic maps from closed 3-manifolds to S^1, giving new proofs of the Bray–Brendle–Neves rigidity theorem for the systolic inequality and of the Geroch conjecture in dimension three. Following Stern's work, the level set method for harmonic functions has seen interesting development and applications in the study of positive scalar curvature problems in dimension 3. In this talk, we review several recent advances in the use of level set techniques for harmonic functions. We also present our own contributions to this direction, in collaboration with Liam Mazurowski.