GEOMETRIC ANALYSIS SEMINAR

"Geodesics via Allen-Cahn min-max on surfaces"

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Abstract: We use a min-max procedure on the Allen-Cahn energy functional to construct geodesics on closed, 2-dimensional Riemannian manifolds. Borrowing classical blowup and curvature estimates from geometric analysis, as well as novel Allen-Cahn curvature estimates due to Wang-Wei, we manage to circumvent the diffuse nature of the problem and study the fine structure of potential singular points, reducing the problem to the classification of well-defined ``entire'' singularity models constructed by del Pino-Kowalczyk-Pacard. The argument is completed by a conjecturally sharp Morse index estimate on these singularity models.

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MIT, Room 2-131
Time: 4:00 PM

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