

PDE, COMPLEX ANALYSIS AND DIFFERENTIAL GEOMETRY SEMINAR

Guest Speaker: Lorenzo Sarnataro
Princeton University

Date: Tuesday, April 30, 2024

Time: 11:00 AM

Location: 258 Hurley Bldg

Zoom URL: <https://notredame.zoom.us/j/98530943143>



Lecture Title:

The Allen—Cahn equation and free boundary minimal surfaces

Abstract

In recent years, the combined work of Guaraco, Hutchinson, Tonegawa, and Wickramasekera has established a min-max construction of minimal hypersurfaces in closed Riemannian manifolds, based on the analysis of singular limits of sequences of solutions of the Allen—Cahn equation, a semi-linear elliptic equation arising in the theory of phase transitions. In this talk, I will describe some recent boundary regularity results for such limit-interfaces, which provide the first step towards an Allen—Cahn min-max construction of free boundary minimal hypersurfaces in Riemannian manifolds with boundary. This is based on joint work with Martin Li (CUHK) and Davide Parise (UCSD).