IST AUSTRIA
Institute of Science and Technology

Mathematics and CS Seminar

Analysis of the thresholding scheme for mean curvature flow in codimension two

Tim Laux (Berkeley)

Host: Julian Fischer

The thresholding scheme, also known as diffusion generated motion, is an efficient numerical algorithm for computing mean curvature flow (MCF). In this talk I will briefly discuss the case of hypersurfaces, and then present our first convergence analysis in the case of codimension two. The proof is based on a new generalization of the minimizing movements interpretation for hypersurfaces (Esedoglu-Otto '15) by means of an energy that approximates the Dirichlet energy of the state function. As long as a smooth MCF exists, we establish uniform energy estimates for the approximations away from the smooth solution and prove convergence towards this MCF. The result relies in a very crucial manner on a new sharp monotonicity formula for the thresholding energy. This is joint work with Aaron Yip (Purdue).

Thursday, January 10, 2019 10:00am - 11:00am

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: https://ist.ac.at/en/campus/how-to-get-here/ The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.