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The thresholding scheme for mean curvature flow and De Giorgi's ideas for minimizing movements

We consider the thresholding scheme, a practically relevant time discretization for mean curvature flow (MCF) introduced by Bence-Merriman-Osher; and prove a (conditional) convergence result in the multi-phase case. The proof is based on the interpretation of the thresholding scheme as a minimizing movement scheme, which means that the thresholding scheme preserves the structure of (multi-phase) mean curvature flow as a gradient flow w. r. t. the total interfacial energy (joint work with Selim Esedoglu). We use ideas of De Giorgi to show that the limit satisfies Brakke's inequality, a way to encode MCF as a gradient flow. Indeed, his abstract notions of metric slope and of variational interpolation for minimizing movements, as formulated by Ambrosio-Gigli-Savare, are tailor-made for this limit.

This is joint work with Tim Laux.

Zeit: Mittwoch, 8. Mai 2019, 17.15 Uhr

Ort: Raum WSC-S-U-4.02

Vor dem Vortrag gibt es ab 16.45 Uhr Gelegenheit zum Gespräch bei Kaffee, Tee und Gebäck im Raum WSC-O-4.43.

Die Dozenten der Mathematik