Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 10. Januar 2023

17 Uhr, Geom H4

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(University of Copenhagen)

Singularities in the mean curvature flow

Abstract:

For hypersurfaces, a useful procedure is to deform via mean curvature. This curvature flow is a partial differential equation giving a canonical way to modify the geometry, which may prove helpful in showing difficult theorems in topology. This talk will start with an overview of on-going efforts to understand the flow's singularities, which turn out to be modeled on certain time-independent solitons (minimal surfaces for weighted areas). Only few examples of these were known until, in joint work with Kleene-Kapouleas, we established existence of infinitely many topological types. In the opposite direction, I will explain recent results joint with Martín and Gama. For collapsed self-translating solitons, we proved in 2022 that the relevant weighted area (entropy) is quantized. Combining this with Morse theory and nodal set techniques, we showed classification theorems in the low entropy, simply connected case. I will illustrate using many pictures, animations and 3D print.

**Vor dem Vortrag (ab 16.30 Uhr) stehen im Foyer vor Hörsaal H4
Kaffee und Tee bereit.**