

TOBIAS COLDING
(MIT)

Singularities of Mean Curvature Flow

Singularities of mean curvature flow (MCF) are unavoidable as the flow contracts any closed hypersurface and it eventually becomes extinct and, thus, understanding singularities is one of the most important problems. Huisken's monotonicity implies that the flow is asymptotically self-similar near a given singularity and, hence, singularities are modeled by self-shrinking solutions of the flow. In this talk I will discuss the following (joint work with Bill Minicozzi):

1. Classification of generic singularities of MCF of hypersurfaces in \mathbb{R}^{n+1} .
2. Compactness for space of all (even non-generic) singularities.
3. Construct generic MCF of closed surfaces in \mathbb{R}^3 assuming conjectured regularity. In particular, we will discuss why MCF that disappear in a compact point generically does so in round points.