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### Mean curvature flow with surgeries of 2-convex hypersurfaces

In 1995, R. Hamilton introduced a surgery procedure for the continuation after singularities of the Ricci flow of a certain class of 4-dimensional manifolds. This technique is fundamental for topological applications (see also the recent work of Perelman) because it allows to keep track of the change of topology of the manifold after singularities.

In this talk (joint work with G. Huisken) we introduce a surgery procedure for mean curvature flow. We consider closed hypersurfaces of dimension greater than two which are 2-convex, i.e. the sum of the two smallest principal curvatures is positive everywhere. Our procedure is inspired by the one of Hamilton for Ricci flow. We prove that, after a finite number of surgeries, one is left with regions diffeomorphic to spheres. As a corollary, we obtain that the surfaces of our class are diffeomorphic to a sphere or to the connected sum of tori.