SIMION STOILOW INSTITUTE OF MATHEMATICS OF THE ROMANIAN ACADEMY

IMAR Monthly Lecture

The flow by minimal curvature

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Abstract: In this talk we look for the convex hull of a set using the geometric evolution by minimal curvature of a hypersurface that surrounds the set. To find the convex hull, we study the large time behavior of solutions to an obstacle problem for the level set formulation of the geometric flow driven by the minimum of the principal curvatures (that coincides with the mean curvature flow only in two dimensions). We prove that the superlevel set where the solution to this obstacle problem is positive converges as time goes to infinity to the convex hull of the obstacle. Our approach is based on a game-theoretic approximation for this geometric flow that is inspired by previous results for the mean curvature flow. Joint work with I. Gonzalvez, J. Ruiz-Cases, and A. Miranda.