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Inverse mean curvature flow

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Abstract

The evolution of hypersurfaces in direction of the inverse of their mean curvature is more nonlinear in nature than mean curvature flow. While expanding the area of evolving surfaces at an exponential rate this flow improves several natural integral invariants of the surface. These monotonicity results persist even in the presence of jumps in weak solutions of the flow and leads to applications in conformal geometry and General Relativity.