Mean Curvature Flow: from Euclidean space to the Heisenberg group

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IN THIS TALK

How do shapes evolve when driven by their mean curvature?
In Euclidean space, Huisken's classical theorem ensures that convex surfaces become spherical sub-Riemannian context, analyzing the flow for mean convex hypersurfaces. We will discuss the problem of self-similarity in this setting and present a recent result: the Pansu sphere, despite being the candidate isoperimetricrole of self-shrinkers as models for singularities. Then, we will move to the sub-Riemannian context, analyzing the flow for mean convex hypersurfaces. We will discuss the problem of self-similarity in this setting and present a recent result: the Pansu sphere, despite being the candidate isoperimetric profile of H^1, is not a self-shrinker. This reveals a striking divergence from the Euclidean intuition, where the static isoperimetric solution and the dynamic evolution profile coincide.

🔑words: Mean Curvature Flow, Heisenberg Group, Mean Convexity

"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)

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U9 - 11
4:45 pm (CET)