学术报告

A new phenomenon involving inverse curvature flows in hyperbolic space

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Abstract： Inverse curvature flows for hypersurfaces in hyperbolic space have been investigated intensively in recent years. In 2015, Hang and Wang constructed an example to show that the limiting shape of the inverse mean curvature flow in hyperbolic space is not necessarily round after scaling. This was extended by Li, Wang and Wei in 2016 to the inverse curvature flow in hyperbolic space by H^{-p} with power $p\in(0,1)$. Recently, we discover a new phenomenon involving inverse curvature flows in hyperbolic space. We find that for a large class of symmetric and 1-homogeneous curvature functions F of the shifted Weingarten matrix $\mathcal{W}-I$, the inverse curvature flow with initial horospherically convex hypersurface in hyperbolic space and driven by F^{-p} with $p\in(0,1]$ will expand to infinity in finite time. The flow is asymptotically round smoothly and exponentially as the maximum time is approached, which means that the flow becomes exponentially close to a flow of geodesic spheres. We also construct a counterexample to show that our results cannot be extended to the case with power $p>1$. This is a joint work with Dr. Yong Wei (ANU) and Dr. Tailong Zhou (Tsinghua University).

欢迎大家参加！