

1147-53-113

Yuguang Shi* (ygshi@math.pku.edu.cn), School of Mathematical Sciences, Peking University, Beijing, 100871, Peoples Rep of China. *Regularity of inverse mean curvature flow in asymptotically hyperbolic manifolds with dimension 3.*

By making use of the nice behavior of Hawking masses of slices of weak solution of inverse mean curvature flow in three dimensional asymptotically hyperbolic manifolds, we are able to show that each slice of the flow is star-shaped after a long time, and then we get the regularity of the weak solution of the inverse mean curvature flow in asymptotically ADS-Schwarzschild manifolds with positive mass. As an application, we prove that the limit of Hawking mass of the slice of the inverse mean curvature flow with any C^2 connected surface as initial data in asymptotically ADS-Schwarzschild manifolds is bigger or equal than the total mass, which is completely different from the situation in asymptotically flat case. This talk is based on my joint work with my Ph.D student Jintian Zhu. (Received December 21, 2018)