

The Weyl problem in warped product spaces and related topics

Zhizhang Wang

E-mail:

Abstract

In this talk, we will concern the Weyl problem in warped product spaces and its application in the generalization of the quasi-local mass. We will discuss the openness, the non uniqueness and the generalization of the definition of the Brown-York mass in the spatial Schwarzschild manifold. We also will concern the Lu-Miao's local Penrose inequality and the work of Lu-Miao for solving the rigidity of their inequality. Meanwhile, the rigidity also raise a question about the uniqueness of the isometric embedded hypersurfaces with the same mean curvature which has been partially solved by Li-Miao-Wang.