國立中山大學應用數學系
學術演講

講　者：Brian Harvie (NCTS)

講　題：On Quasi-Local Mass in General Relativity

時　間：2023/04/20（Thursday）15:10～16:00

地　點：理 SC 4009-0 教室

茶　會：14:30

Abstract

In Newtonian gravity, there is a clear relationship between the gravitational potential and the mass of the system. Due to the divergence theorem, the total mass contained within a domain is encoded in the first-order behavior of the potential function. No such relationship between potential and total mass exists in Einstein's general relativity. There, the gravitational potential corresponds to a metric, which has no meaningful first-order quantity associated with it. As such, finding suitable notions of mass is a longstanding and important goal in mathematical relativity.

In this talk, we will review important notions and results on mass and quasi-local mass in general relativity, including the ADM mass, the positive mass theorem, and Bartnik's quasi-local mass for compact Riemannian manifolds. Later, I will discuss my own joint work with Prof. Ye-Kai Wang of NYCU on determining the Bartnik mass of small geodesic balls in Riemannian manifolds.

敬 請 公 告！ 歡 迎 參 加！

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