

## **On 3+1 Lorentzian Einstein Manifolds with One Rotational Isometry**

**(13 Dec 2016)**

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Differentiable manifolds whose Ricci curvature is proportional to the metric are called Einstein manifolds. Such manifolds have been central objects of study in differential geometry and Einstein's theory for general relativity, with some strong recent results.

In this talk, the speaker shall focus on positively curved 3+1 Lorentzian Einstein manifolds with one spacelike rotational isometry. After performing the dimensional reduction to a 2+1 dimensional Einstein's equations coupled to 'shifted' wave maps, the speaker shall prove two explicit positive mass theorems: i) for CMC slices in expanding region, and ii) for maximal slices in stationary region.