On asymptotically flat solutions of Einstein's equations periodic in time

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Abstract:

We show that asymptotically-flat, time-periodic solutions of the Einstein equations with one of a range of sources, and which are analytic at infinity are necessarily stationary near infinity. We also look at the question of 'inheritance' of symmetry, i.e. when does a source of the Einstein equations necessarily share (or 'inherit') a symmetry of the metric?

Based on joint work with Jiri Bicak and Martin Scholtz: arXiv:1003.3402, 1008.0248.