

METU Mathematics General Seminar

Where does the energy live on a manifold? Some recent results on conserved quantities in spacetime

Bayram Tekin

Bilkent University (Ankara, Türkiye)

Abstract

General Relativity models gravitation as a 3+1-dimensional pseudo-Riemannian manifold. This connects concepts like mass, momentum, and angular momentum to differential geometric invariants of the underlying manifold. We will discuss our recent work on this, where we express these quantities in terms of the Riemann tensor rather than the first derivative of the metric tensor. The relevant details can be found in: [arXiv:2607.25646](https://arxiv.org/abs/2607.25646)

Date: Thursday, 1 October 2026

Time: 16:00

Place: Gündüz İkedâ Seminar Room