

MTH 409 GENERAL RELATIVITY: (3 Units) (L30: P 0: T 15)

Particles in a gravitational field: Curvilinear coordinates, intervals. Covariant differentiation; Christoffel symbol and metric tensor. The constant gravitational field. Rotation. The Curvature tensor.

The action function for the gravitational field. The energy momentum tensor. Newton's law. Motion in a centrally symmetric gravitational field. The energy moment pseudotensor. Gravitational waves. Gravitational fields at large distances from bodies. Isotropic space. Space-time metric in the closed and in the open isotropic models. The red shift.