

Geodesic Motion in Spinning Spaces

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(Received: 2006-1-11; Revised:)

Abstract: In this paper the generalized equations for spinning space are investigated and the constants of motion are derived in terms of the solutions of these equations. We study the geodesic motion of the pseudo-classical spinning particles in the spacetime produced by an idealized cosmic string and the non-extreme stationary axisymmetric black hole spacetime. The bound state orbits in a plane are discussed. We also show, for a conical spacetime and the Kerr spacetime, that the geodesic motion of spinning particles is different.

PACS: 04.70.Dy, 05.40.-a

Key words: spinning particles, geodesic motion, Killing-Yano tensor, equatorial plane

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