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Study of spinning particles around rotating black holes

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Abstract

The orbital velocity profile around the Kerr black holes has a non-monotonic radial behavior in the Locally Nonrotating Frames (LNRF). Using Mathisson- Papapetrou- Dixon equation for a massive spinning particle, again this maximum-minimum feature has been shown by considering the linear spin approximation. Also the spin of black holes and absolute value of particle's spin have an important rule in Aschenbach effect.

Keywords: spinning particles, ascenbach effect and blackhole physics

For full article, refer to the Persian section