General Relativity and Quantum Cosmology

ISCOs in Extremal Reissner Nordstrom Spacetimes

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(Submitted on 3 Jan 2010)

Circular geodesic orbits, both timelike and null, in extremal Reissner-Nordstrom spacetimes, are examined with regard to their stability, and compared with similar orbits in the non-extremal situation, focusing for simplicity on the near extremal case. Innermost Stable Circular Orbits (ISCOs), when they exist in the extremal case, are shown to lie infinitesimally close to the event horizon in coordinate distance, and correspond to zero energy trajectories. It is shown that this class of ISCOs are absent in the corresponding near-extremal spacetime.

Comments:	19 Pages Latex 2e, no figures
Subjects:	**General Relativity and Quantum Cosmology (gr-qc)**
Cite as:	**arXiv:1001.0359v1 [gr-qc]**

Submission history

From: Parthasarathi Majumdar [view email]
[v1] Sun, 3 Jan 2010 11:08:01 GMT (13kb)

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