

Abstract Submitted
for the APR06 Meeting of
The American Physical Society

Analyzing Orbits of Bodies Accreting into Schwarzschild and Kerr Black Holes JAFET MORALES, RICHARD CARDENAS, St. Mary's University — The purpose of this report is to use Maple to study the orbits of bodies accreting into Schwarzschild and Kerr black holes. A Schwarzschild black hole is a spherically symmetric black hole with no charge and no angular momentum, while a Kerr black hole has charge and angular momentum. In this study, I wrote Maple programs to look at these types of black holes under a variety of initial conditions. In addition, I compared these general relativistic solutions to a classical model. My research was focused mainly on studying general relativity and black holes. I studied geodesics near both Schwarzschild and Kerr black holes with the use of computer algorithms in Maple. I also designed an algorithm that will help understand null geodesics coming from the accretion disk of Kerr black holes, and how they can be affected by several factors, such as the torus around the BH, and ionized gas.

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Date submitted: 11 Jan 2006

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