Abstract Submitted
for the SES11 Meeting of
The American Physical Society

Orbits and Scaling for an Isotropic Metric JOSEPH RUDMIN, James Madison University — Scaling of physical quantities shows the symmetries of an isotropic metric. For example, invariance of Planck's constant under gravitational scaling provides consistency of general relativity with quantum mechanics. Invariance of charge and electric field strength provide consistency with electromagnetism. Transitivity of scaling eliminates the traditional need for a globally preferred reference frame. Rather, diagonalization of the metric yields local rest frames. Conventional application of the Einstein Equation has inconsistencies and contradictions, such as gravitational fields without energy, objects crossing event-horizons, objects exceeding the speed of light, and inconsistency in scaling the speed of light and its factors. An isotropic metric resolves such problems by attributing energy to the gravitational field, in the energy-momentum tensor of the Einstein Equation. Scattering, orbital period, and precession offer ways to distinguish an isotropic from a Schwarzschild metric.

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Date submitted: 07 Jul 2011 Electronic form version 1.4