

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Newtonian Gravitation and General Relativity as Possible Classical Corresponding Theories to Quantum Gravity PHILMORE RUSSELL, North Carolina Central University — There are many traditional methods used by theoretical physicists to create a comprehensive theory of gravity that works on both the macroscopic and quantum scale. One common idea has been to unify the theory that works for gravity on the macroscopic scale, namely general relativity, with quantum mechanics, the theory that is used in modeling the behavior of entities on the micro scale. However, we propose the possibility that both the theory of general relativity and Newtonian Mechanics may be viewed as classical analogues to gravity's true quantum nature. In the same manner that the harmonic quantum oscillator mirrors the classical one (at high n), the manner in which both theories treat gravity as a continuous potential that changes inversely with distance with respect to its source may indicate a similar correspondence, implying an underlying quantum characteristic of gravity. This also implies that both general relativity and Newtonian Mechanics are successful theories (on the large scale) by virtue of the fact that they were created specifically to model gravity on the macroscopic scale.

Philmore Russell
North Carolina Central University

Date submitted: 15 Jan 2008

Electronic form version 1.4