Contribution ID: **395** Type: **Parallel Sessions**

A metric theory of gravity with torsion in extra-dimension

Saturday, July 7, 2012 1:45 PM (15 minutes)

Present a theory of gravity with an extra-dimension and metric-dependent torsion. A set of constraints imposed on the geometry confine torsion components to the extra-dimension and determine all the connection coefficients in terms of the metric. At the kinematic level, the theory maps on to 4D General Relativity. keeping the extra-dimension hidden. But the dynamical field equations that follow from the action principle deviate markedly for the standard Einstein equations.

Summary

Investigations of spherically symmetric vacuum solutions and homogeneous-isotropic cosmological within the framework lead to solutions of significant physical interest. In the first case, positive mass solutions with naked singularity that match Schwarzschild solutions at large distances without an event horizon. In the cosmological context, an oscillatory scenario of the universe emerges in contrast to the inevitable big bang of the standard cosmology

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Session Classification: Room 216 - Particle Astrophysics and Cosmology -TR11

Track Classification: Track 12. Formal Theory Developments