ASTRONOMY SEMINAR

May 31, 2010

Speaker : Prof. Roustam Zalaletdinov
Uzbek Academy of Sciences, Uzbekistan, CIS

Title : Macroscopic Gravity and Cosmology

Day, Date & Time : Tuesday, 8 June, 2010 at 16.00 hrs

Venue : Lecture Theatre (AG-66)3

(J.S.Yadav)

Abstract

The approach of macroscopic gravity to resolve the averaging problem in general relativity and cosmology is discussed. Macroscopic gravity (MG) is a classical theory of gravity with a built-in gravitational correlation scale. It is a generalization of general relativity (GR) which incorporates the (macroscopic) gravitational correlation fields. In a cosmological setting MG serves as a theory of the large-scale gravitation. The system of the macroscopic gravity equations for the simplest version of the theory of macroscopic gravity with no metric correlations, one connection correlation tensor and the averaged matter energy-momentum tensor taken as perfect fluid is presented. A procedure for solving the MG equations is outlined. Recent developments in macroscopic gravity and known exact solutions are reviewed. Interpretation of cosmological solutions in MG as compared with cosmological solutions in GR is discussed.