Area Seminar

Title	Relativistic heavy-ion collisions and causal viscous hydrodynamics
Date and Time	10/07/2013 16:00:00
Speaker	Manu George Senior Research Fellow PRL, Ahmedabad
Area	Theoretical Physics
Venue	Room No. 469
Abstract	Relativistic heavy ion collisions set a platform to study the properties of matter at very high temperature (T>200 MeV). The colour-deconfinement phase transition can occur at such a high temperature. This new phase of nuclear matter is called quark-gluon plasma(QGP),where quarks and gluons are no longer confined inside the hadronic volume, but move freely in a bigger volume occupied by the colliding nuclei. Relativistic hydrodynamic formalism is highly successful in describing space-time evolution of the particles produced in relativistic heavy ion collisions.One of the very important question to study in relativistic-heavy ion collision, is to accurately determine the viscosity of the strongly interacting matter. The relativistic Navier-Stokes equation is known to violates causality and gives unphysical behavior. Therefore one has to look for an alternate hydrodynamic description. One of the widely used such hydrodynamic description is due to Muller,Israel and Stewart. In this talk I will discuss about development of relativistic fluid dynamics up to second order.