

Seminar Notice

On 27th April, 2022

Time: 3:30 PM

Venue- PAMU Seminar Room (offline)

Physics and Applied Mathematics Unit
Indian Statistical Institute, Kolkata- 700108

Speaker: Mr. Abhishek Naskar

Postdoctoral Fellow, Indian Institute of Technology, Bombay

Title: Primordial Magnetogenesis: An EFT Approach

Abstract:

A detectable amount of magnetic field can be probed at all scales of the Universe. There are various possible origins of this observed magnetic field and it is very much possible that this magnetic field is generated during the primordial stage of the Universe. There are various models for the primordial magnetogenesis scenario and if the inflationary background is considered one needs to break conformal symmetry to generate a sufficient amount of magnetic field. To break conformal symmetry one can introduce different couplings between electromagnetic field and inflaton field or add higher derivative terms to the theory. One can also introduce different primordial scenarios like matter bounce to produce sufficient magnetic fields.

One interesting way to study these different mechanisms of primordial magnetogenesis is to apply the generic approach of Effective Field Theory (EFT) where the system is described by EFT parameters and different choices of parameters correspond to different models and this approach is successfully applied to study the inflationary perturbations. In this talk, we will try to describe a consistent EFT framework for the primordial magnetogenesis scenario.

All are Cordially Invited to Attend

(Head, PAMU)