## ICTS String Seminar (HYBRID)

**Title** : BMS symmetry of gravity from Hamiltonian formulation(s)

**Speaker** : Sucheta Majumdar (ENS de Lyon, France)

**Date** : Wednesday, 20th September 2023

**Time** : 03:00 PM (IST)

**Abstract** : The purpose of this talk is to discuss Hamiltonian methods for gauge theories in context of asymptotic symmetries. The BMS group, that arises as the asymptotic symmetry group of gravity at null infinity, may also be realized within the Hamiltonian formulation of gravity, providing a consistent canonical description of the symmetry. Starting from the (3+1) ADM formalism, I will demonstrate how the BMS symmetry follows from the invariance of the ADM action under suitable boundary conditions. In the second part of the talk, I will focus on an alternative Hamiltonian formulation of gravity based on Dirac's front form, which involves two null coordinates along the light-cone and two transverse spatial directions, resulting in a (2 + 2) split of four-dimensional spacetime. In this (2+2) formulation as well, the BMS symmetry can be derived from the invariance of the Hamiltonian action under residual diffeomorphisms. While the two formulations exhibit some apparent differences, I will illustrate how the nature of BMS supertranslations, as inferred from both approaches, agrees with each other.

**Venue** : **Offline:** Madhava Lecture Hall (ICTS)

**Online:** Please click the below link to join the seminar

https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09