ICTS Seminar

Title : A comparison between fluid-gravity and membrane-gravity dualities

Speaker : Parthajit Biswas, National Institute of Science Education and Research, Bhubaneswar

Date : Thursday, May 23, 2019

Time : 11:30 AM

Venue : Chern Lecture Hall, ICTS Campus, Bangalore

Abstract : In this talk, I will try to compare two different perturbation techniques that could be used to generate solutions of Einstein's Equations in presence of negative cosmological constant. One of these is `derivative expansion', where the gravity solutions are in one-to-one correspondence with the solutions of relativistic Navier-Stokes equation. The second one is `large-D' expansion where the gravity solutions are in one-to-one correspondence with the dynamics of a codimension one dynamical membrane, embedded in AdS space and coupled to a velocity field. I will try to show that in a large number of space-time dimensions there exists an overlap regime between these two perturbation techniques and will try to match the two gravity solutions together with their dual systems up to the order the solutions are known both sides.