

ICTS-String Theory Seminar

- Title : BTZ Dynamics and Chaos
- Speaker : Rohan Poojary, Chennai Mathematical Institute
- Date : Thursday, September 19, 2019
- Time : 4:00 PM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : We find an effective action for gravitational interactions with scalars in AdS3 to first order in GN at the conformal boundary. This action can be understood as an action for the Brown-Henneaux modes and is given by the square-root product of right and left moving Schwarzian derivatives for conformal transformations of the boundary. We thus reproduce the result $\lambda L = 2\pi\beta$ for OTOC computed first in arXiv:1412.6087 for a Schwarzschild black hole in AdS3. Applying the same procedure to rotating BTZ we find the Lyapunov index to be $\lambda L = 2\pi\beta + > 2\pi\beta$ where $\beta + = \beta(1 - \mu L)$, with $\mu L = r - r_+$ being the chemical potential for angular momentum. We thus comment on a possible modification to a part of the proof given in arXiv:1503.01409 to accommodate this result.