

## ICTS M.Sc. Project Seminar

- Title : Examining Nonviolent Nonlocality
- Speaker : Vijay Kumar, ICTS-TIFR, Bangalore
- Date : Friday, July 31, 2020
- Time : 10:30 AM
- Venue : Online seminar. Please click on the below link to join the seminar --  
<https://us02web.zoom.us/j/86298538643?pwd=eG1JR3JCWndRWnN6MEltNnQzblpqQT09>  
Meeting ID: 862 9853 8643  
Passcode: u3E2zz
- Abstract : In this seminar, I will discuss nonviolent nonlocality, a proposal to resolve the information paradox by Steven Giddings. Exploring nonviolent nonlocality Giddings came to the conclusion that the geometry of spacetime near the black hole horizon may differ from general relativity prediction by  $O(1)$ . Giddings suggested that  $O(1)$  fluctuation in geometry can be confirmed by observing photon rings and accretion disc dynamics through the Event Horizon Telescope. Giddings analysis of nonviolent nonlocality doesn't include statistical physics constraint which restricts quantum fluctuation in observables. Adding this constraint in nonviolent nonlocality I determine the size of possible fluctuations in spacetime near horizon. Then I will show that observing any effect of allowed fluctuations in geometry requires angular resolution practically impossible to achieve. In the end, I will briefly discuss how resolving the information paradox doesn't require adding information transfer mechanisms like nonviolent nonlocality.