Contribution ID: **101** Type: **not specified**

Role of Mutual information on the Page curve

In this work, we give two proposals regarding the status of connectivity of entanglement wedges and the associated saturation of mutual information. The first proposal has been given for the scenario before the Page time depicting the fact that at a particular value of the observer's time $t_b = t_R$ (where $t_R \ll \beta$), the mutual information $I(R_+ : R_-)$ vanishes representing the disconnected phase of the radiation entanglement wedge. We argue that this time is the Hartman-Maldacena time at which the fine-grained entropy of radiation goes as $S(R) \sim \log(\beta)$, where β is the inverse of Hawking temperature of the black hole. On the other hand, the second proposal probes the crucial role played by the mutual information of black hole subsystems in obtaining the correct Page curve of radiation.

Author: ROY CHOWDHURY, ANIRBAN (S.N.Bose National Centre for Basic Sciences)

Co-authors: Mr SAHA, Ashis (University of Kalyani); Dr GANGOPADHYAY, Sunandan (S.N.Bose National Centre for Basic Sciences)

Presenter: ROY CHOWDHURY, ANIRBAN (S.N.Bose National Centre for Basic Sciences)