## Eurostrings 2022, Lyon



ID de Contribution: 48

Type: Non spécifié

## **Islands for Entanglement Negativity**

We advance two alternative proposals for the island contributions to the entanglement negativity of various pure and mixed state configurations in quantum field theories coupled to semiclassical gravity. The first construction involves the extremization of an algebraic sum of the generalized Renyi entropies of order half. The second proposal involves the extremization of the sum of the effective entanglement negativity of quantum matter fields and the backreacted area of a cosmic brane spanning the entanglement wedge cross section which also extremizes the generalized Renyi reflected entropy of order half. These proposals are utilized to obtain the island contributions to the entanglement negativity of various pure and mixed state configurations involving the bath systems coupled to extremal and non-extremal black holes in JT gravity demonstrating an exact match with each other. Furthermore, the results from both the proposals match precisely with the island contribution to half the Renyi reflected entropy of order half providing a strong consistency check. We then allude to a possible doubly holographic picture of our island proposals and provide a derivation of the first proposal by determining the corresponding replica wormhole contributions.

## Type of contribution

Contributed Talk or Poster

Author: PARIHAR, Himanshu (Indian Institute of Technology Kanpur, India)

**Co-auteurs:** M. BASAK, Jaydeep Kumar (Indian Institute of Technology Kanpur, India); M. BASU, Debarshi (Indian Institute of Technology Kanpur, India); Dr MALVIMAT, Vinay (Saha Institute of Nuclear Physics, Kolkata, India); Prof. SENGUPTA, Gautam (Indian Institute of Technology Kanpur, India)

Orateur: PARIHAR, Himanshu (Indian Institute of Technology Kanpur, India)

Classification de Session: Posters

Classification de thématique: Posters