THE QUANTUM SPACETIME SEMINAR SERIES

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Department of Theoretical Physics

Entanglement entropy of gravitational edge modes

(Zoom Seminar)

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Zoom link shall be shared separately

We briefly introduce the importance of edge modes in the evaluation of entanglement entropy of subregions in U(1) gauge theory. We revisit the evaluation of the contribution of these modes towards the universal logarithmic coefficient of entanglement across a spherical spatial region in U(1) gauge theory in even d dimensions. We show that this agrees with the corresponding coefficient of the edge Harish-Chandra character of the theory on the d-sphere. We then consider the theory of linearized gravitons in 4 space-time dimensions. Quantizing the theory in tensor spherical harmonics we evaluate the contribution of the edge modes of the graviton towards entanglement of a spatial region. We observe that this coefficient coincides with that extracted from the edge Harish-Chandra character of the massless spin-2 field on the 4-sphere.

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