THE QUANTUM SPACETIME SEMINAR SERIES

Hyperbolic cylinders and entanglement entropy
(Zoom Seminar)

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Zoom link shall be shared separately

It is known that for conformal field theories, entanglement entropy across a spherical entangling surface can be obtained from the partition function of the CFT on the hyperbolic cylinder. We introduce a convenient method of fixing gauge for evaluating the partitions functions of free gauge theories on hyperbolic cylinders: photons, anti-symmetric tensors, linearized gravitons and higher spin-fields. Using this method we obtain the universal contribution of entanglement entropies of these theories and the dimension of the twist operator corresponding to the defect localized on the entangling surface. Though the theory of gravitons is not conformal, we observe that its universal contribution to entanglement entropy agrees with that evaluated recently by Cassini and Benedetti by canonical methods. The result for the higher spin-fields also agrees with their conjecture.

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