Thursday, 29 May 2014

15:15-16:00

2nd Floor Seminar Room

Entanglement in General Holographic 2d CFTs

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Abstract

There has been phenomenal recent progress in computing entanglement and Renyi entropy in conformal field theories with pure gravity duals. As a step toward further understanding the intersection of holography, entanglement and the fundamental structure of CFTs, we extend these methods to more general 2d CFTs and their gravity duals. In particular, we work in the realm of higher spin holography, by computing ground state entanglement and Renyi entropy in certain classes of holographic 2d CFTs with higher spin symmetry. This involves a precise match between CFT and higher spin gravity calculations, performed at both leading and next-to-leading order in large central charge (small Newton's constant). We also present results on entanglement and Renyi entropy in 2d CFTs with gravitational anomalies, and a holographic modification of the Ryu-Takayanagi formula that encodes the anomalous contributions to entanglement.