



**ΚΟΙΝΟ ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ ΚΑΙ
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ & ΚΕΝΤΡΟΥ ΘΕΩΡΗΤΙΚΗΣ ΦΥΣΙΚΗΣ ΚΡΗΤΗΣ /
JOINT CCQCN -CCTP SEMINAR**

Tuesday, 31 March 2015

14:15-15:15

2nd Floor Seminar Room of the physics department

Quantum entanglement of locally perturbed thermal states

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Abstract

We will review the main arguments leading to the connection between quantum entanglement and geometry in the context of the AdS/CFT correspondence. Building on this, we will perturb a thermal state and ask what the time scale is for the mutual information between two subsystems to vanish. We will motivate this question from black hole physics and relate it to the notion of scrambling time. We will explicitly compute the mutual information for a thermofield double state perturbed by a localised primary operator in 2d CFTs in the large c limit. We will briefly comment on the holographic calculation involving a BTZ black hole and the relation with previous work in the literature.

