

Notes of Gravity and Entanglement

Taper

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Abstract

This is my notes to [1], a video lecture given by professor Mark Van Raamsdonk. Also, it seems that this lecture is unrelated to another paper of the same title, written by the same author, on arXiv [2].

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1 Lecture

We have reviewed ads/CFT, entanglement, some interesting connections between entanglement structure of the CFT states, and the geometry structure of the space time due to this state. If this is true, a natural question is whether we can understand spacetime dynamics, i.e. gravitation, from some physics related to entanglement.

Consider some CFT theory, assumning to satisfy the xxxxx (1'50) conjectur entanglement entropies are computed via: xxxxx conjecture 2'17

$$S(A) = \frac{\text{Area}(A)}{4G_N} \quad (1.0.1)$$

Some propertries that entanglement entropy must satisfy:

1. sub-aditivity: $S(A \text{ and } B) - S(A) - S(B) \geq 0$

If there is some geometry due to the original states, will their entropy satisfy the above constraints. Hence: **what do those constraints imply about the spacetime geometry?**

Start with small perturbations to (?).

References

- [1] Availalble on Youtube: Mark Van Raamsdonk -Gravity and Entanglement.
- [2] arXiv:1609.00026v1

2 License

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