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## **【255】 Exploring non-local observables in shock wave collisions**

*Wednesday 23 August 2017 15:15 (15 minutes)*

We study the time evolution of 2-point-functions and entanglement-entropy in anisotropic and time dependent  $\mathcal{N} = 4$  super-Yang-Mills-theory in the large  $N$  and large 't Hooft-coupling limit using AdS/CFT.

On the gravity side this amounts to calculating geodesics and extremal surfaces in the background of two colliding gravitational shockwaves, which we do numerically.

Discriminating between three classes of initial conditions corresponding to wide, intermediate and narrow shockwaves, we show that the behavior of the non-local observables is different.

Another interesting result is that 2-point-functions can be sensitive to the inside of a black hole apparent horizon while we could not find such dependence for the entanglement-entropy.

This talk is based on arXiv:hep-th/1609.03676.

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