

Hydrodynamisation and entanglement entropy in expanding spacetimes

Monday 26 July 2021 13:00 (45 minutes)

This talk will be about hydrodynamisation in an FRW universe and entanglement entropy in empty 4-dimensional de Sitter spacetime of a non-conformal QFT [1]. I will first briefly describe the set-up and show how a hydrodynamic plasma dilutes and falls out of equilibrium due to expansion towards empty de Sitter spacetime. Interestingly, in the empty setting we can show that extremal surfaces in the holographic dual of spherical entangling regions on the boundary QFT probe beyond the dual event horizon if and only if the entangling region is larger than the cosmological horizon. Finally, I will show new results on hydrodynamisation when including dynamical gravity on the boundary.

[1] Jorge Casalderrey-Solana, Christian Ecker, David Mateos and WS, Strong-coupling dynamics and entanglement in de Sitter space, 2011.08194

Presenter: VAN DER SCHEE, Wilke (CERN)