Contribution ID: **36** Type: **Theme 1: Non-relativistic session**

A BPS Road to Holography: Decoupling Limits and Non-Lorentzian Geometries

Tuesday 29 April 2025 10:00 (1 hour)

I explore decoupling limits that lead to matrix theories on D-branes, focusing on their BPS nature and the emergence of non-Lorentzian target space geometries. In these limits, D-branes experience instantaneous gravitational forces, and when applied to curved geometries, it is shown that a single decoupling limit leads to the AdS/CFT correspondence. By applying two such limits, we generate new holographic examples, including those with non-Lorentzian bulk geometries. We also examine the relationship between matrix theories and non-relativistic string theory, and their uplift to M-theory. Finally, we demonstrate that reversing these decoupling limits corresponds to deformations of matrix theories, connecting them to the TTbar deformation in two dimensions. These deformations provide a new perspective on the near-horizon brane geometry and lead to TTbar-like flow equations for the Dp-brane DBI action.

Presenter: OBERS, Niels (Niels Bohr Institute)

Session Classification: Non-relativistic: Plenary talk (Chair: Giandomenico Palumbo)