

Sourced Carrollian Fluids Dual to Black Hole Horizons

Saturday 1 November 2025 09:30 (15 minutes)

The (degenerate) geometry of event horizons is linked to Carrollian fluids. We investigate the behaviour of event horizons via a perturbative coupling to a massless scalar field, making connections to Carrollian hydrodynamics with a driving source, and discuss the fluid equilibration in tandem with the horizon's relaxation to equilibrium. We observe that after the perturbation dies off, the Carrollian fluid energy and momentum densities approach equilibrium as the horizon asymptotically becomes non-expanding. We connect the equilibration of the Carrollian fluid dual to the black hole horizon through the expansion of its background geometry.

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Session Classification: Saturday Morning Session 1