

## Celestial Symmetries of Black Hole Horizons

*jeudi 26 juin 2025 14:00 (1 heure)*

I will present a novel correspondence between the gravitational phase space at null infinity and the subleading phase space for finite-distance null hypersurfaces, such as black hole horizons. Using Newman-Penrose formalism and an off-shell Weyl transformation, this construction transfers key structures from asymptotic boundaries to null surfaces in the bulk—for instance, a notion of radiation. Imposing self-duality conditions, I will identify the celestial symmetries and construct their canonical generators for finite-distance null hypersurfaces. This framework provides new observables for black hole physics.

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