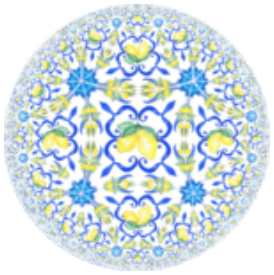

Contribution ID: **13** Type: **not specified**

Infrared structure of gravitational scattering up to quadrupolar order

Thursday 19 June 2025 14:00 (30 minutes)

Asymptotically flat spacetimes have been defined from consistently matching their five infinities such that they share a single BMS group of asymptotic symmetries and associated charges. We propose a consistent subleading and subsubleading structure which is covariant under the BMS group. At subleading order, we identify three conservation laws: tails are conserved between past and future null infinity, an identity leading to the subleading soft graviton theorem holds, and a flux-balance law of super-Lorentz charges holds. At subsubleading order, we identify the flux-balance law of quadrupolar charges which we define for the first time in full general relativity. Moreover, two conservation laws of subleading tails hold, and two conservation laws hold which are related to the classical subsubleading soft graviton theorem and its logarithmic correction.

Presenter: COMPÈRE, Geoffrey

Session Classification: Topical Seminars