Contribution ID: **138**   Type: **not specified**

Asymptotic Symmetries for Logarithmic Soft Theorems

Tuesday, 4 June 2024 10:20 (30 minutes)

Gauge theories and perturbative gravity in four dimensions are governed by a tower of infinite-dimensional symmetries that arise from tree-level soft factorization theorems of the S-matrix. However, aside from the leading soft theorems which are all-loop exact, subleading ones receive loop corrections due to long-range infrared effects which result in new soft theorems with logarithmic dependence on the energy of the soft particle. In this talk I will initiate a program to compute long-range infrared corrections to the generators of asymptotic symmetries in scalar QED and gravity and show how the conservation law of the infrared corrected charges provides a symmetry interpretation for the leading logarithmic soft theorems. By virtue of being universal and all-loop exact, this is a key element for a holographic principle in spacetimes with flat asymptotics.

Presenter: PUHM, Andrea (University of Amsterdam (NL))