Séminaire commun

Corner Symmetries in Gravity

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Mardi 14 Mars 2023 à 14:00

LPENS – E244 (24 Rue Lhomond)

Résumé

In the last 7 years, we have gathered a lot of results pointing toward an underlying universal symmetry structure in gravity. I will give an overview of these recent results, focussing in particular on two main features. First, we will derive the universal corner symmetry algebra, which can be regarded as the algebra of observables in classical gravity. Secondly, we will propose an extension of the gravitational covariant phase space such that all diffeomorphism charges are integrable, albeit the system is still dissipative. These two ingredients are at the core of the corner proposal, which is a bottom-up approach to quantum gravity, based on symmetries. After enunciating and discussing this proposal, time permitting, I will mention how the geometric degrees of freedom at cuts of null hypersurfaces can be quantized, and its far-reaching consequences for quantum gravity.