

Physics Theory Seminar

Monday, April 16, 2018 / Pupin Hall Theory Center, 8th Floor / 2:10 PM

"Berry Phases of Boundary Gravitons"

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This talk is devoted to Berry phases that appear in unitary representations of asymptotic symmetry groups in general relativity. These phases arise when a coherent state is acted upon by symmetry transformations that trace a closed path in the group manifold, and they can be evaluated exactly even when the group is infinite-dimensional. We apply these ideas to the Virasoro and BMS groups; seeing their representations as particles dressed with boundary gravitons, the associated Berry phases generalize Thomas precession and provide, in principle, observable signatures of asymptotic symmetries.