ID de Contribution: **108** Type: **Non spécifié**

Double Field Theory as the Double Copy of Yang-Mills

The double copy construction in scattering amplitudes hints at a deep connection between Yang-Mills (YM) theory and gravity. It states, roughly speaking, that exchanging the color information by the kinematic information of gluon scattering amplitudes leads to gravity amplitudes. A first principle understanding of this color-kinematic double copy, however, remains elusive. In the interest of shedding some light on this issue, we show that double field theory naturally arises from the color-kinematic double copy of YM theory. We state a precise double copy prescription for the quadratic and cubic orders in the YM action, based on the prescription at the level of amplitudes. More precisely, at quadratic order this yields the gauge invariant double field theory, whereas at cubic order it yields the double field theory action subject to a gauge condition that originates from Siegel gauge in string field theory.

Type of contribution

Contributed Talk or Poster

Authors: DIAZ-JARAMILLO, Felipe (Humboldt University Berlin); Prof. PLEFKA, Jan (Humboldt University Berlin); Dr HOHM, Olaf (Humboldt University Berlin)

Orateur: DIAZ-JARAMILLO, Felipe (Humboldt University Berlin)

Classification de Session: Posters

Classification de thématique: Posters