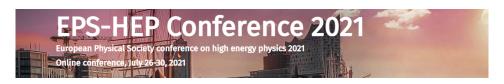Contribution ID: **1124**   Type: **Parallel session talk**

Four-dimensional treatment of positivity bounds with gravity

Tuesday 27 July 2021 16:00 (20 minutes)

We formulate Positivity Bounds for scattering amplitudes including exchange of gravitons in four dimensions. We generalize the standard construction through dispersion relations to include the presence of a branch cut along the real axis in the complex plane for the Maldestam variable s. In general, validity of these bounds require the cancellation of divergences in the forward limit of the amplitude. We show that this is possible only if one assumes a Regge behavior of the amplitude at high energies. As a non-trivial fact, a concrete UV behaviour of the amplitude is uniquely determined by the structure of IR divergences. We discuss also possible phenomenological applications of these bounds.

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Collaboration / Activity

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