



Contribution ID: 71

Type: **not specified**

Amplitudes and Backgrounds in Split Signature

Wednesday 16 December 2020 10:30 (30 minutes)

In this talk we are going to explore classical features of electromagnetic and gravitational radiation using quantum scattering amplitudes. To do so we analytically continue to a spacetime with $(2, 2)$ signature $\eta_{\mu\nu} = \text{diag}(+, +, -, -)$. This allows us to consider, at leading order, 3-point on-shell amplitudes which would otherwise be identically zero in usual Minkowski spacetime. Our main result is that, in the classical limit, the scattered state is a coherent state which is the exponential of a 3-point amplitude. This occurs for both EM and GR radiation, which happen to be related to each other through the double copy. This opens up new possibilities to study gravitational wave physics with quantum field theory and unitarity methods.

Would you be interested in receiving feedback on your talk?

Yes

Will you be pre-recording your talk?

No

Length of talk

15-25 minutes

Are you happy for your talk to be recorded?

Yes

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