Contribution ID: **35**   Type: **Long talk (20 mins)**

Non-Linear Solutions and the Double Copy

Friday, 16 December 2022 15:30 (30 minutes)

The double copy relates scattering amplitudes in quantum gravity as the square for those in non-abelian gauge theories. This property has been extended to relate position space solutions in classical physics in biadjoint scalar, gauge and gravity theories. So far, no strongly coupled examples of the double copy in four dimensions have been found, and previous attempts based on exact non-linear solutions of biadjoint theory in Lorentzian signature have proved unfruitful. Instead, we search for solutions in Euclidean signature, which could be relatable to Yang-Mills or gravitational instantons. We show that non-linear spherically symmetric power-like Euclidean solutions are non-existent in four spacetime dimensions. The reason why this is the case turns out to involve the Eguchi-Hanson instanton.

Type of presentation

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