Contribution ID: **1419**   Type: **Parallel session talk**

Relations between graviton and gluon amplitudes from twistor space

Saturday 20 July 2024 11:45 (15 minutes)

The double copy is a powerful tool allowing us to obtain amplitudes in gravity from simpler ones in gauge theory. It was originally derived from string theory, relating the tree level amplitudes of closed string amplitudes to two copies of open string amplitudes. In the field theory limit, this reduces to being able to obtain tree-level graviton amplitudes from the "square" of tree-level gluon amplitudes. At the same time, these field theory amplitudes have miraculously simple expressions coming from twistor space, for any number of external legs and helicity configuration of gluons and gravitons. However, the double copy relation between these formulae has historically been extremely non-obvious. In this work we use concepts from graph theory to demonstrate the derivation of a double copy based in twistor space, and explore what this can teach us about the relation between gauge theory and gravity.

Alternate track

I read the instructions above

Yes

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