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A Geometric Approach to Scattering Amplitudes in $\mathcal{N} = 8$ Supergravity

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I will introduce the language of on-shell diagrams for calculating scattering amplitudes via BCFW recursion in $\mathcal{N} = 4$ super Yang Mills theory, and then explain how they can be extended to $\mathcal{N} = 8$ supergravity. I will describe how this approach relates scattering amplitudes to the Grassmannian $\text{Gr}(k, n)$, a purely geometric object describing the space of k planes in n dimensions. This link to the Grassmannian exposes a duality between on-shell diagrams and ambi-twistor string theory, and I will present my work in progress in this area.

Primary author: Mr FARROW, Joseph (Durham University)

Presenter: Mr FARROW, Joseph (Durham University)

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