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The standard model on twistor space

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Many recent advances in the calculation of scattering amplitudes are inspired by insights from twistor space as initiated by Witten. However, little direct use has been made untill recently of the extra structure available on the twistor space. Partly based on joint research with Lionel Mason and David Skinner, I will present a simple method of deriving actions on twistor space from any given four dimensional theory with matter with spin less than or equal to one. In particular, the method applies to the standard model. Extra gauge symmetry on the twistor space allows one to choose a gauge which reproduces MHV/CSW-style Feynman rules. On space-time, I will show that this corresponds to a non-local and non-linear field transformation.

Based on preprint

hep-th/0703080, hep-th/0702035 and some work in progress

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