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Calculating amplitudes in the multi-Regge regime of strongly coupled N=4 SYM

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In this talk, I will present results for the 6- and 7-point amplitude in strongly coupled N=4 super Yang-Mills theory in the multi-Regge regime. I will review the calculation of scattering amplitudes in strongly coupled N=4 SYM, where calculating the amplitude corresponds to calculating a specific minimal surface embedded into AdS5.

The leading order solution of this problem is determined by a set of non-linear integral equations, which, however, do not allow an analytic solution for arbitrary kinematics.

We therefore study this problem in the multi-Regge regime, in which the equations simplify and where explicit solutions can be obtained.

I will present a general algorithm for the calculation of amplitudes in this kinematic regime and show new results for the 6- and 7-point amplitude as specific examples.

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