

Parameters Evolution of the Pomeron Using the Functional Renormalisation Group

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It is well established that singularities in the t-channel complex plane of scattering amplitudes give rise to contributions known as Reggeons (e.g. the Pomeron, Odderon, etc.). Within the Lagrangian framework of Reggeon Field Theory, these features provide the starting point for our analysis. In this work we solve the Wetterich equation of the Functional Renormalisation Group to obtain the β -functions governing the scale dependence of the Lagrangian parameters.

For the Pomeron in particular, it is especially informative to examine the evolution of its slope and intercept, as these parameters receive different contributions at different energy scales. For instance, the soft Pomeron dominates at low energies, whereas the hard Pomeron becomes relevant at high energies. We compare the fixed points of the β -functions for the intercept and slope with experimental determinations of these parameters.

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