A Regge Model for Nucleon-Nucleon Scattering Amplitudes
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Dominion and Jefferson Lab — We present a model to calculate nucleon-nucleon
(NN) scattering amplitudes, at laboratory kinetic energies greater than 1.3 GeV.
The model, based on Regge theory, is fully relativistic, and exhibits full spin de-
pendence. We relate the Regge exchanges to the Fermi invariants, which gives an
organized and simplified method to incorporate Regge exchanges into the NN scat-
tering. An added benefit is that all spin dependence is explicitly dealt with. The
parameters in the model are from the Regge trajectories, which are obtained from
the meson spectrum, and the residues. We employ phenomenological residues, which
we determine by fitting our model to total and differential cross section data, and
the SAID helicity amplitudes. Preliminary results are presented.

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