Spin-dependence of meson production in NN collisions

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The dynamics of the reaction $NN \to NN\pi$, near threshold, is closely linked to NN scattering as it is the lowest inelastic channel in NN collisions. In this light, it is puzzling that although the NN interaction is believed to be well understood phenomenologically, there is currently no theoretical explanation for the wealth of polarization data available for $NN \to NN\pi$. To find the missing physics, a partial-wave analysis of the data is mandatory. To carry out this program, we present here a model-independent irreducible tensor approach to meson production in NN collisions, which leads to a spin-structure of the T-matrix valid at all energies together with exact partial-wave expansions for the reaction amplitudes. These expressions have been used to estimate the values of the partial-wave amplitudes for the reaction $\vec{p}\vec{p} \to pp\pi^{\circ}$. First results will be presented at the Conference.

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