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Single transverse spin asymmetry of the very forward neutral pion production

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We investigate the single transverse spin asymmetry of the very forward neutral pion production from interferences between p , $\Delta(1232)$, $N^*(1535)$ and $\Delta(1700)$ Reggeons. The Born amplitudes for the $p + p^\uparrow \rightarrow \pi^0 + X$ are factorized to the proton-pion-baryon vertex and inclusive proton-baryon amplitude $A_{pB \rightarrow X}$. The optical theorem leads these amplitudes to be normalized as differential cross sections for $pB \rightarrow pB'$ scattering. We will parametrize the cross sections since they are experimentally unknown. The numerical results describe recent experimental data from the RHICf Collaboration very well. The present study indicates that in the low p_T and large x_F region A_N can be understood through Regge-exchange processes.

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