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The $pp \to pn\pi^+$ reaction with proton-neutron final state interaction

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The reaction of π -meson production in proton-proton collision is considered at an energy of 800 MeV. Two reaction mechanisms are taken into account to describe the process. One of them is the one-pion exchange mechanism. The pion-nucleon interaction is described by an energy-dependent parameterization.

Also, the final state interaction between the two nucleons is included in the consideration. This mechanism is described by the NN wave function, which is obtained by the matrix inversion method. As a result, the reaction amplitude is determined, which allows calculating both the differential cross section and any polarization observables.

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