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Optical scheme of the neutrino channel with magnetic horns and dipoles at the U–70 accelerator complex

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The optical scheme of the channel based on two magnetic horns for the formation of neutrino beams with a narrow energy spectrum at the U–70 accelerator complex for the P2O experiment is considered, the far detector of which is located at a distance of 2595 km from the end of the decay channel. To select the required momentum interval of π-mesons, we propose using two dipole magnets with opposite polarity. By rotating the decay part of the channel with respect to the primary proton beam directed to the target, we minimize the content of background neutrinos in the main beam of muon neutrinos (antineutrinos) compared to a direct channel with magnetic horns. The main calculated characteristics of neutrino beams at the far detector of the P2O experiment at an energy of the primary proton beam of 60 GeV are discussed.

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