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Crystal Optical Solution for Generation of High Energy Neutrino Beams

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The problem of creation of high energy neutrino beams on the basis of modern and future circular proton accelerators with the help of traditional technology seems to be expensive and difficult. Because of this, we propose the solution of this problem based on the usage of focusing bend single crystals. In the report we demonstrate the possibilities of acceptance and focusing of a pion beam with the help of a crystal optical lens system. As an illustration of these features the calculated neutrino fluxes for energy of circulating proton beam equal to 6.5 TeV are presented. The work is supported by Russian Science Foundation (grant 17-12-01532).

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