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Magnetic Field Errors Tolerance of Nuclotron Booster

Generation of magnetic field in the units of the booster synchrotron for the NICA project is one of the most important conditions for getting the required parameters and qualitative accelerator operation. Research of linear and nonlinear dynamics of the 197Au31+ ion beam in the booster was carried out with the MADX program. Analytical estimation of magnetic field errors tolerance and numerical computation of dynamic aperture of the booster DFO-magnetic lattice is presented. Closed orbit distortion with random errors of magnetic fields and errors in layout of the booster units was evaluated.

Primary authors: Mr TUZIKOV, Alexey (VBLHEP JINR); Dr BUTENKO, Andrei (Joint Institute for Nuclear Research); Dr KHODZHIBAGIYAN, Hamlet (VBLHEP JINR); KAZINOVA, Olha (Joint Institute for Nuclear Research); Dr KOSTROMIN, Sergei (Joint Institute for Nuclear Research); MIKHAYLOV, vladimir (JINR)

Presenter: KAZINOVA, Olha (Joint Institute for Nuclear Research)

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