A Study of Polarized Proton Acceleration in J-PARC¹

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Abstract

We studied the feasibility of polarized proton acceleration in the J-PARC accelerator facility, consisting of a 600 MeV linac, a 3 GeV rapid cycling syncrotron (RCS) and a 50 GeV synchrotron (MR). We show how the polarization of the beam can be preserved using AC Dipoles in the RCS and two superconductive partial helical Siberian Snakes in the MR. The lattice of the MC will be modified with the addition of quadrupoles to compensate for the focusing properties of the snakes.

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