

Preservation of the proton polarization up to 13.5 GeV/c in the Nuclotron at JINR using partial snakes based on dynamic solenoids

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The scheme of the proton polarization preservation throughout Nuclotron momentum range employing 20% partial snakes based on a dynamic solenoid with a field ramp rate of ~ 1 T/s is presented. Orbit and the beam optical parameters are not subjected to change over protons acceleration with dynamic solenoids. External targets experiments and injections of polarized protons into the NICA collider at any available energy, including those higher than the transition energy, will become feasible. It will open a possibility to inject protons in the NICA collider directly at energies corresponding to a spin transparency mode at integer spin resonances without employing of full solenoid snakes.

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