

AGS intensity and polarization upgrade plan for RHIC

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Abstract

Currently, Brookhaven AGS (Alternative Gradient Synchrotron) provides 70% proton polarization with 2×10^{11} intensity. This is achieved by two partial snakes to overcome vertical intrinsic and imperfection resonances and a pair of horizontal tune jump system to overcome the weak but many horizontal intrinsic resonances. Further gain was achieved by maintain smaller transverse emittance with same beam intensity. The main effort now is to reduce the emittance in the AGS and to reduce the resonance strength consequently. This paper summarizes the effort.