Polarized Proton Acceleration in the AGS with Two Helical Partial Snakes¹

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Acceleration of polarized protons in the energy range of 5 to 25 GeV is particularly difficult: the depolarizing resonances are strong enough to cause significant depolarization but full Siberian snakes cause intolerably large orbit excursions and are not feasible in the AGS since straight sections are too short. Recently, two helical partial snakes with double pitch design have been built and installed in the AGS. With careful setup of optics at injection and along the ramp, this combination can eliminate the intrinsic and imperfection depolarizing resonances encountered during acceleration. This paper presents the accelerator setup and preliminary results.

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