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NICA absolute polarimeter

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The development of the absolute polarimeter APol with an internal polarized atomic hydrogen/deuterium jet target for NICA collider is presented. It is proposed to install the polarimeter into the “warm” gap of the collider ring arc. The polarized jet will cross both accelerated beams. The jet target is based on the classical atomic beam source principle. Expected target thickness of the jet in the interaction regions is 10^{12} atom/cm². APol utilizes a reaction of elastic scattering of identical nuclei (protons or deuterons). The polarization of the accelerated beams is determined by use of an actual analyzing power which is measured in turn in scattering of unpolarized accelerated beams on the polarized atomic jet. The polarization of the atomic hydrogen/deuterium jet will be measured by Breit-Rabi polarimeter placed under the collider ring into a jet catcher volume.

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