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Dilution cryostats as a part of Atomic Hydrogen Targets for electron beam polarimetry

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A dilution cryostat and a hydrogen gas cell for a novel method of precision measurement of the polarization of a high-power electron beam with almost 100% polarization are discussed. An ultracold magnetic trap for polarized atomic hydrogen gas in a strong magnetic field is used as a target for electron beam polarimetry based on Møller scattering. JINR is performs calculations, design work and manufacturing of units of a new polarimeter for MESA accelerator in Mainz, Germany.

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