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Last Achievements in the Experiments with ECR Heating in the Gas Dynamic Trap

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Axially symmetric magnetic mirror device, Gas-Dynamic Trap (GDT, Budker Institute, Novosibirsk) has recently demonstrated a tangible increase of the electron temperature with application of ECR heating. According to Thomson scattering data, the electron temperature exceeding 0.4 keV has been achieved thus demonstrating twofold increase. Additionally to standard device operation with 5 MW neutral beams, a newly installed electron cyclotron resonance heating (ECRH) system was employed (54.5 GHz, 0.4 MW). The reported increase of the electron temperature along with previous experiments, which demonstrated plasma confinement with beta as high as 60%, provide a firm basis for extrapolating to a fusion-relevant high-flux neutron source based on GDT.

Country or International Organisation

Russian Federation

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