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Status of GOL-3 Multiple Mirror Trap Experiments

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The GOL-3 Multiple Mirror Trap is an 11-m-long solenoid with an axially-periodical (corrugated) magnetic field. In the basic operation regime, the solenoid consists of 52 magnetic corrugation cells with Bmax/Bmin = 4.8/3.2 T. Deuterium plasma of 1020÷1022 m-3 density is heated up to ~ 2 keV ion temperatures (at ~1021 m-3 density and τE~1 ms) by a high power relativistic electron beam. The new source of intense long-pulse electron beam with a plasma cathode was developed at BINP for the experiments on a quasi-stationary beam injection in GOL-3. The injector was installed in the end tank of GOL-3 multiple mirror trap, and tested to produce 20 MW, 100 keV electron beam with a sub-ms pulse duration. The new data will be presented including that on electron beam transport, on the plasma stabilization by controlled both the radial current profile and the plasma potential.

Country or International Organisation

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