Contribution ID: **3460**   Type: **not specified**

P4.1084 Progress in the experiment on the neutral beam injection on the spherical tokamak Globus-M2

Thursday, 11 July 2019 14:00 (2 hours)

See the full abstract here:
http://ocs.ciemat.es/EPS2019ABS/pdf/P4.1084.pdf

The first plasma on the new spherical tokamak Globus-M2 [1] was obtained in the spring of 2018. During the test experimental campaign, the routine Globus-M shot with moderate density, current of 0.2 MA and magnetic field of 0.5 T [2] was reproduced. The main discharge parameters were monitored using routine diagnostics, such as magnetic probes and loops, microwave interferometer, etc. Since the vacuum vessel in the new tokamak remained the same, the existing injector was docked simultaneously with the tokamak assembly. During testing of the injector, a beam of 26 keV 0.7 MW deuterium atoms was applied. After testing campaign, the experiment was suspended to complete work on upgrading the tokamak power supplies, setting up the diagnostics and heating and non-inductive current drive systems. In the course of these works a second injector with atomic energy up to 50 keV and power up to 1 MW was docked to the tokamak. Like the first one, the second beam is coinjected into the plasma tangentially in the middle plane of the torus. The impact parameter (0.3 m) was chosen on the basis of minimizing direct losses and ensuring the possibility of beam transportation through turns of a toroidal magnetic field coil. The injection pulse overlaps in time the entire plasma discharge, due to the injector power supply system, fed from the AC mains. The paper presents the results of the first experiments on plasma heating using neutral beam injection in discharges with an increased magnetic field and plasma current. The results of the study of the ion component using the NPA and CXRS diagnostics are reported.

References: [1] V.B. Minaev, V.K. Gusev, Y.V. Sakharov, et al., Nucl. Fusion 57 (2017) #066047. [2] V.B. Minaev, V.K. Gusev, Y.V. Sakharov, et al., Proc. 45th EPS Conf. on plasma physics (Prague, 2018) P4-1065.

Presenter: MINAEV, V.B. (EPS 2019)

Session Classification: Poster P4

Track Classification: MCF