

The GOLEM tokamak bibliography

Topic: **stabilization**

The tokamak GOLEM team

September 30, 2025

1 GOLEM Articles

References

J. Kocman: Řízení polohy plazmatického prstence na tokamaku Golem

KocmanMT

J. Kocman. “Řízení polohy plazmatického prstence na tokamaku Golem”. Master Thesis. 2015. URL: <http://golem.fjfi.cvut.cz/wiki/Presentations/Students/MasterThesis/15KocmanJindrich.pdf>.

Abstract: Determination and control of the plasma position is one of the basic tasks in the tokamak operation. This thesis describes the current state of the plasma position control on the GOLEM tokamak with a focus on diagnostics for determination of the plasma position. The theoretical part contains formulae for vertical and horizontal displacement using poloidal magnetic field derived from Grad–Shafranov equation. The plasma position system is able to control the plasma in two perpendicular directions, the vertical and the horizontal. It provides two modes, the pre-defined and the feedback. The plasma position system has been implemented into the remote control room allowing to perform remote plasma position studies. Relative plasma-life prolongation of more than 50% was achieved with this system.

Svoboda et al.: Remote operation of the vertical plasma stabilization @ the Golem tokamak for the plasma physics education

Svoboda-2015-FUSENGDES

V. Svoboda et al. “Remote operation of the vertical plasma stabilization @ the Golem tokamak for the plasma physics education”. In: *Fusion Engineering and Design* 96-97 (2015), pp. 974–979. ISSN: 0920-3796. DOI: 10.1016/j.fusengdes.2015.06.044. URL: <http://www.sciencedirect.com/science/article/pii/S0920379615300740>.

Abstract: Abstract The Golem tokamak at the Czech Technical University has been established as an educational tokamak device for domestic and foreign students. Remote participation in the scope of several laboratory practices, plasma physics schools and workshops has been successfully performed from abroad. A new enhancement allowing understandable remote control of vertical plasma position in two modes (i) predefined and (ii) feedback control is presented. It allows to drive the current in the stabilization coils in any time-dependent scenario, which can include as a parameter the actual plasma position measured by magnetic diagnostics. Arbitrary movement of the plasma column in a vertical direction, stabilization of the plasma column in the center of the tokamak vessel as well as prolongation/shortening of plasma life according to the remotely defined request are demonstrated.