

BASICS OF TOKAMAK OPERATION

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This tutorial lecture is devoted to introducing the tokamak principle on a very basic level with the aim to prepare participants for remote operation of the GOLEM tokamak from Kiten. Attention will be paid to the formation of toroidal magnetic and electric fields in the tokamak vessel, breakdown of the working gas and ohmic heating.

Next, the GOLEM tokamak, operational at the Faculty of Nuclear Physics and Physical Engineering, will be described with sufficient details. In particular, we will focus on the description of:

- Power supplies
- Vacuum and gas handling systems
- Necessary steps for conditioning of the tokamak vessel (baking and glow discharge cleaning)
- Available diagnostic tools (magnetic and optical diagnostics, probes, HXR spectrometer and fast camera)
- Structure of the GOLEM database.

Participants will be informed how to read experimental data, Simple examples of data processing will be presented (e.g. how to calculate the edge safety factor and to estimate the electron temperature, ...).

After the lecture, the GOLEM tokamak will be operated remotely from Kiten during the satellite workshop.