

# Magnetic confinement of high temperature plasma at the GOLEM tokamak

**Abstract:** The instructions present an introduction to the physics, technology, diagnostics and operation of the (GOLEM) tokamak. The purpose of the measurement is to demonstrate the very basics of tokamak operation, and to demonstrate the basic scaling properties of magnetic confinement.

## 1 Tools

MiscellaneousMisc:tools4KFpraktika

## 2 Tasks

Homework:RemoteDataManipulation HandsOn:BasicLabIntro HandsOn:InstallBasicDiagn HandsOn:Calibration TauExxBt

## 3 Theoretical introduction

### 3.1 Tokamak (GOLEM)

IntroductionBasicTokamakMission  
TokamakGOLEMconcept  
TokamakGOLEMparametersFlow  
theory:confinementTimeOverview

### 3.2 Plasma heating power $P_{OH}$

theory:PlasmaHeatingPower diagnostics:currentDrive theory:plasmaResistanceSimple

### 3.3 Central electron temperature $T_{e0}$

theory:CentralElectronTemperature

### 3.4 Thermal plasma energy $W_p$

theory:PlasmaTotalEnergy theory:powerBalance

### 3.5 Energy confinement time $\tau_E$

theory:tauE

## 4 Experimental Setup

### 4.1 The GOLEM tokamak - technological scheme

ExperimentalSetup

## **4.2 Discharge procedure**

dischargeProcedure

## **4.3 The GOLEM tokamak diagnostics**

Diagnostics

## **4.4 Remote Control**

RemoteControl

## **5 Measurement procedure, method of evaluation**

Procedure

## **6 Acknowledgments and feedback**

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If you, the reader, wish to add your name to this list, send us your feedback to [svoboda@fjfi.cvut.cz](mailto:svoboda@fjfi.cvut.cz). Especially useful and constructive feedback will be appropriately rewarded.