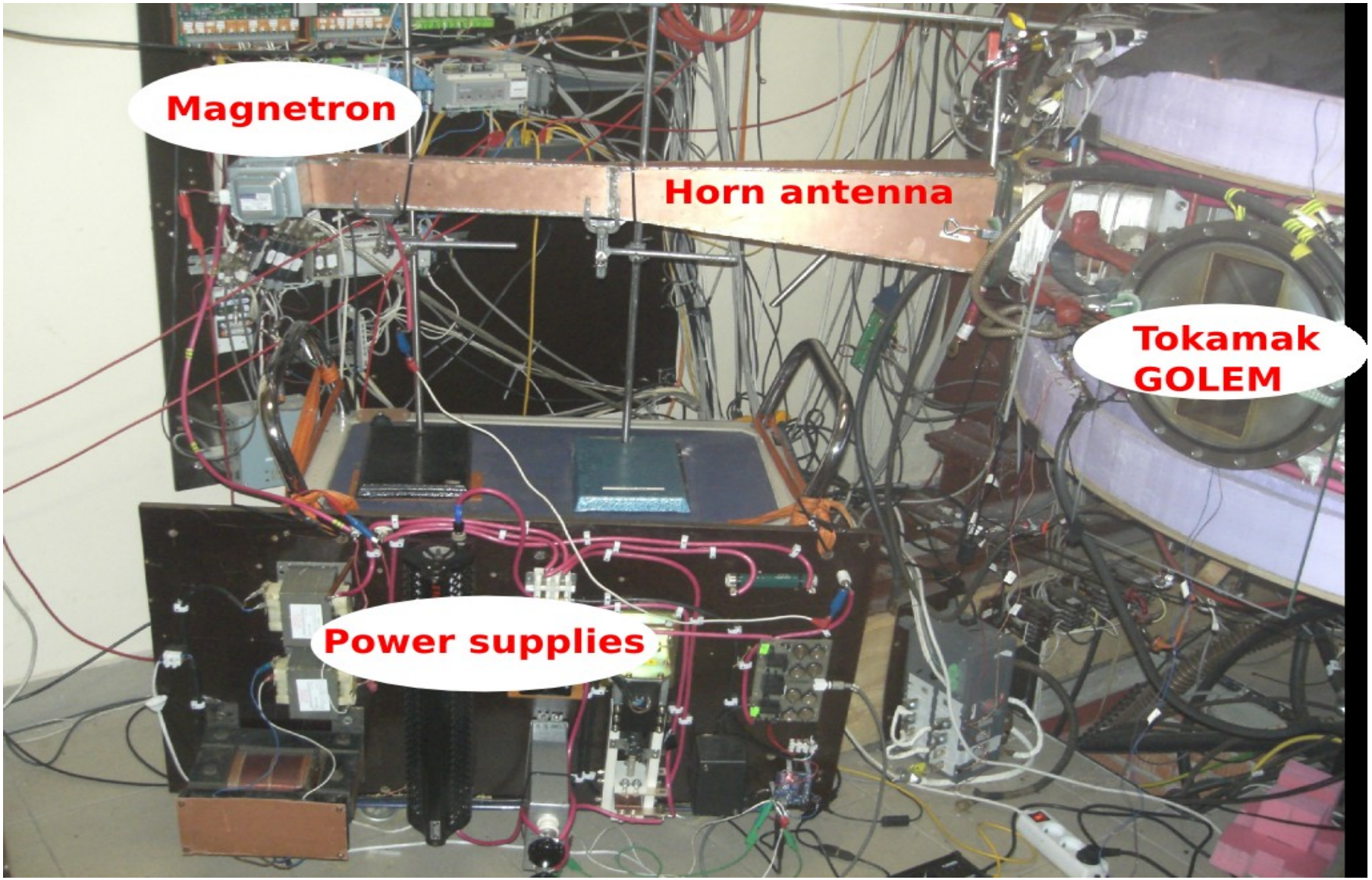
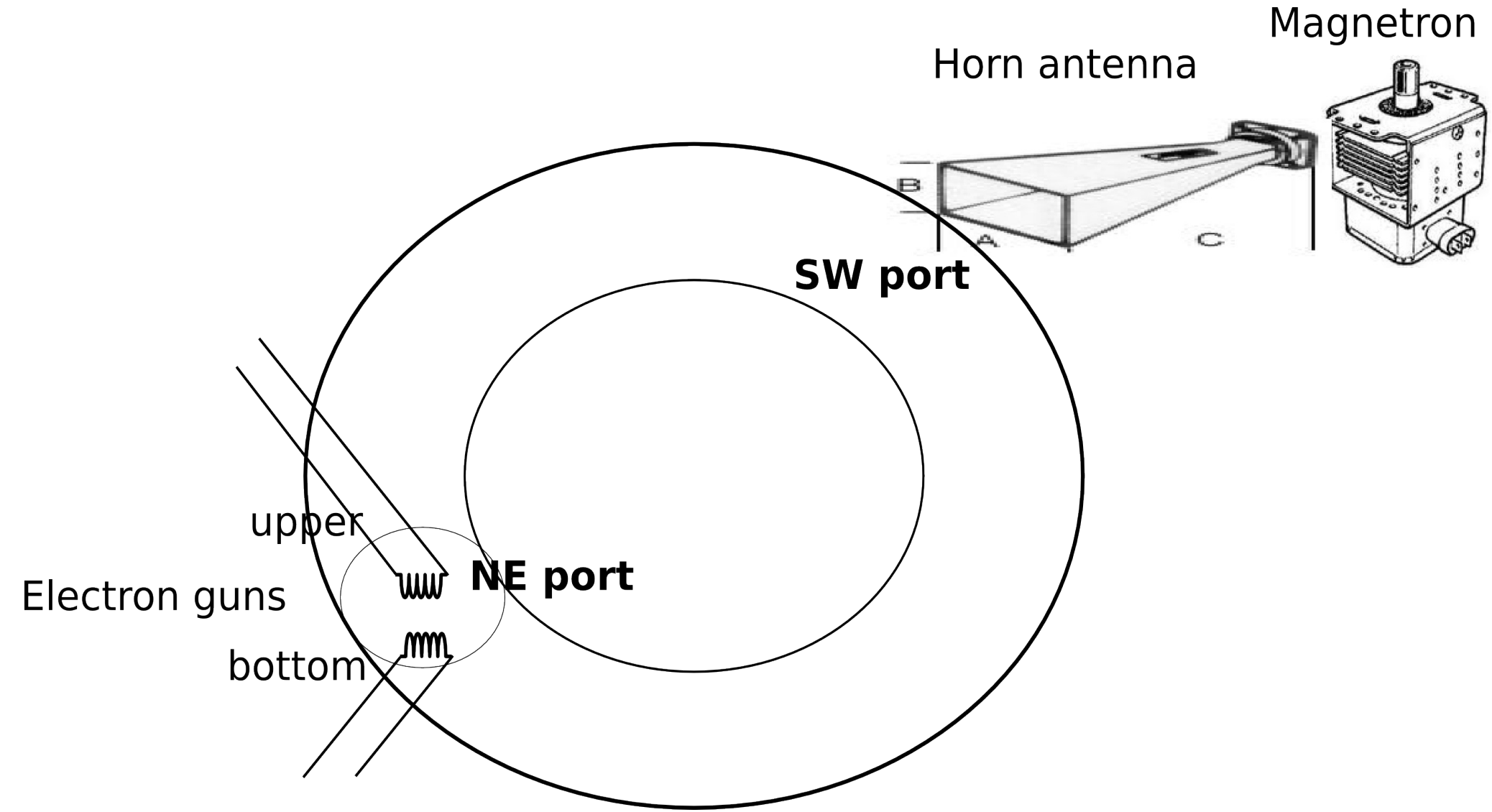
Investigation of RF pre-ionisation on GOLEM tokamak



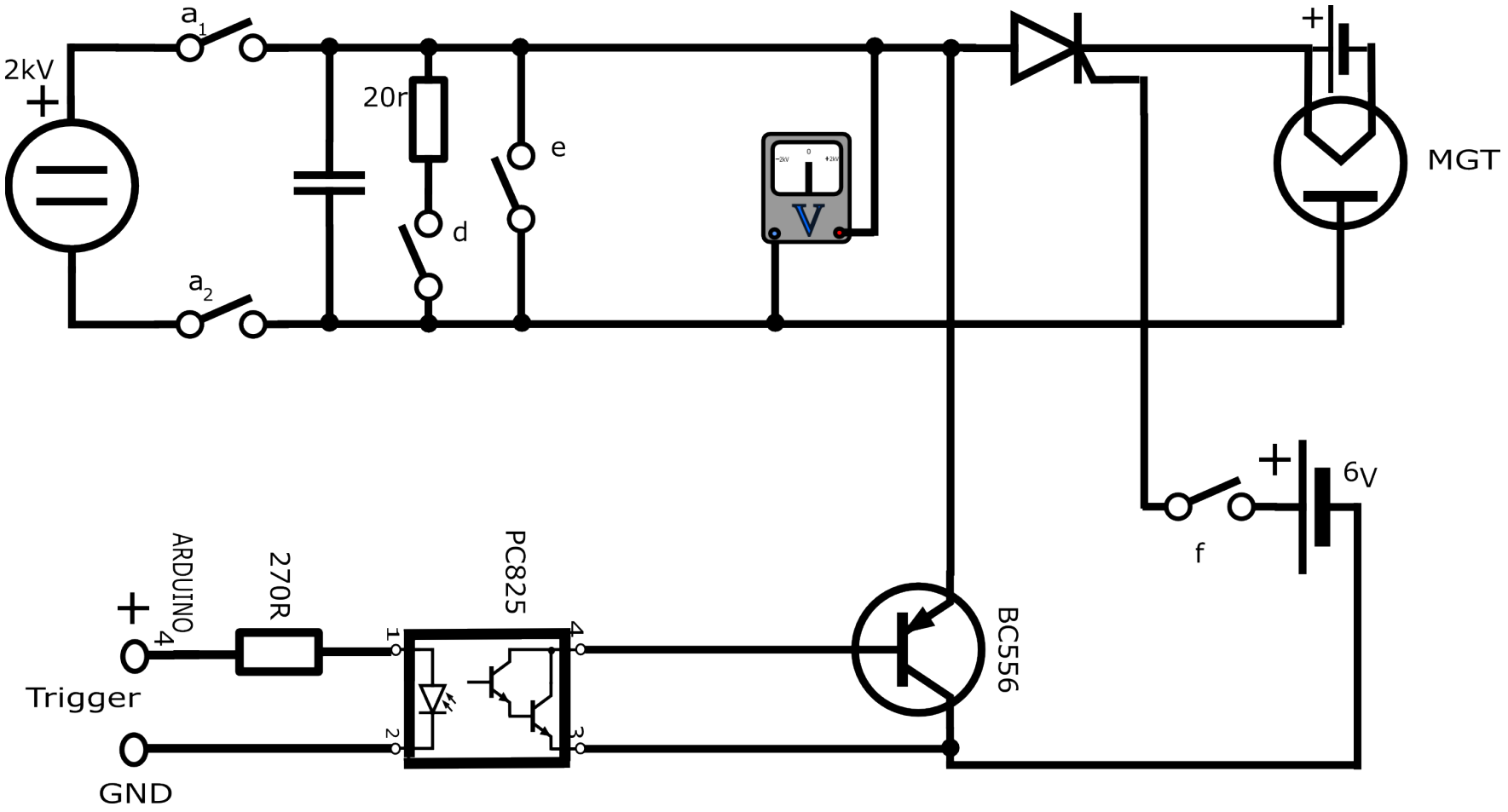
Motivation

- **To <u>continue</u> tests of low-power ECR preionization for plasma formation on GOLEM tokamak.**
- Optimisation of the use of HTS PF coils on GOLEM requires modifications to the discharge scenario.
- To reduce AC losses during current ramp-up in HTS coils, reduction in the current ramp-up speed is needed.

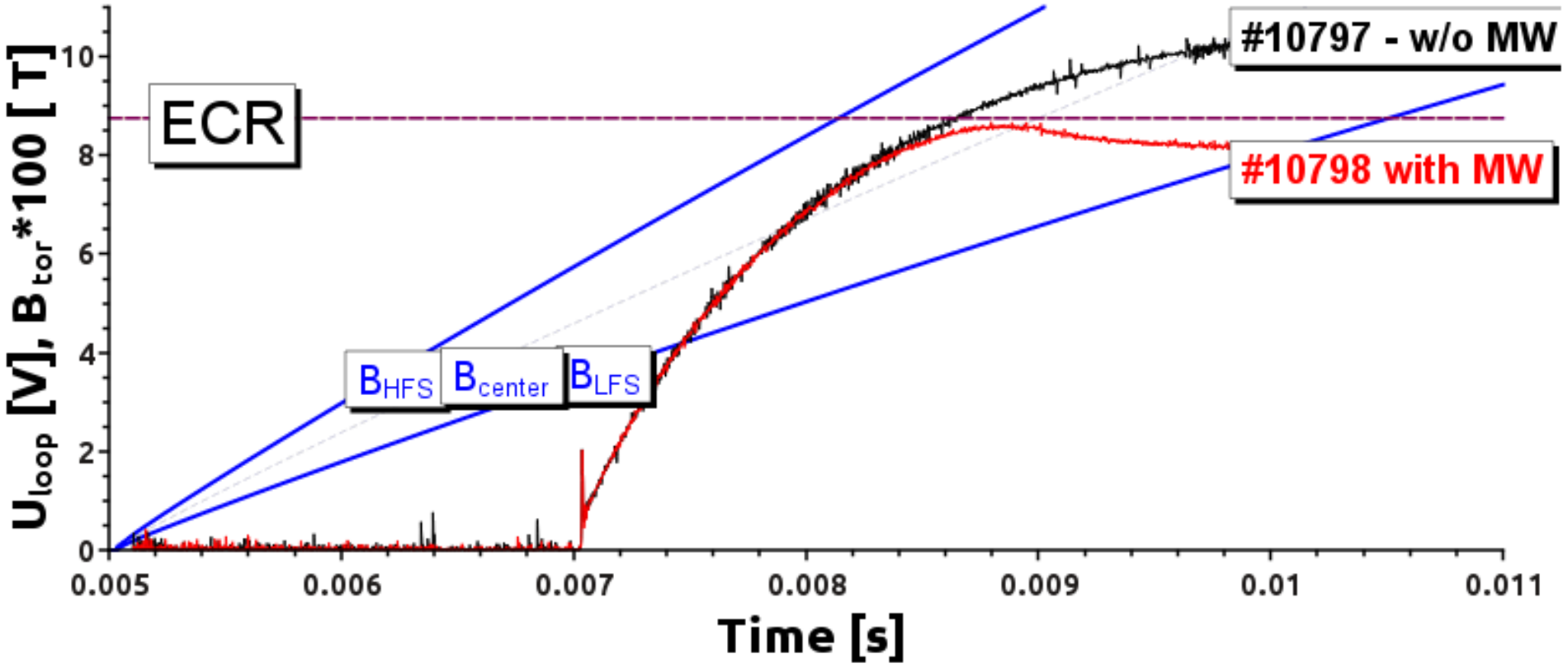
Experimental setup



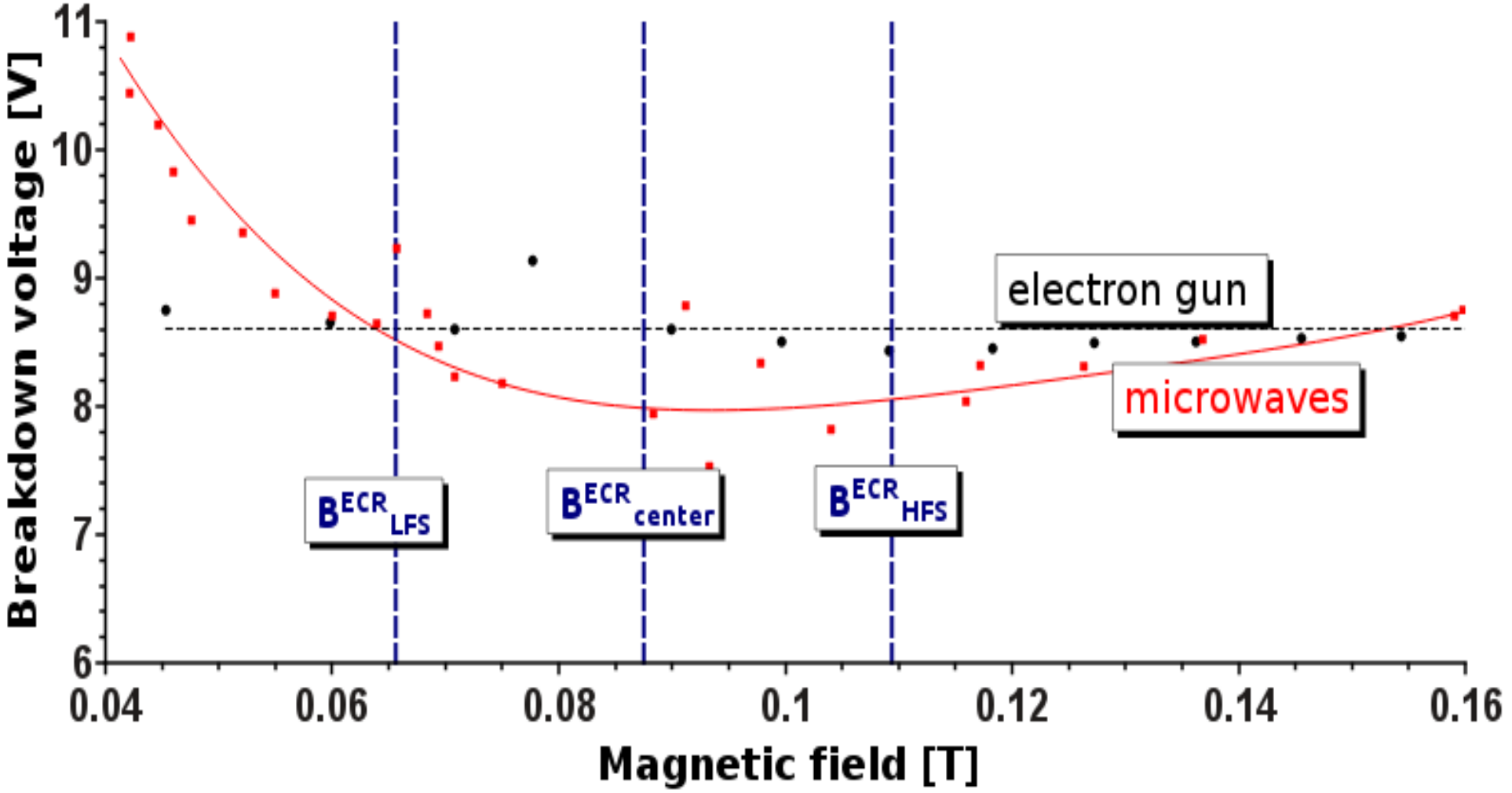
Electrical scheme



Vacuum and MW breakdown driven plasma shot (03/2013)



MW versus ElGun preionization @ 10 mPa (03/2013)



Scope and method

Scope: to continue experiments with the low-power magnetron at the EC fundamental harmonics for the toroidal field of ~ 0.1T at 2.45GHz, ~1kW injected power with the aim to reduce requirements for the breakdown electric field.

Method: Experimental investigation of RF pre-ionisation on GOLEM tokamak. About 20-30 plasma pulses will be needed to optimise parameters.