**Studium ubíhajících elektronů na tokamaku GOLEM**

Školitel: Vojtěch Svoboda

Práce bude zaměřena na pokročilé studium jevu ubíhání elektronů [1] na tokamaku GOLEM, a naváže tak na předchozí výzkum v rámci projektu CAAS [2]. Práce doktoranda se zaměří na zavedení moderních metod tzv. integrované analýzy dat (IDA) právě s ohledem na řadu měření, která se v současné době při studiu RE používají. Hlavními cíli práce bude

Literatura:

[1] Ficker O. et al. Runaway electron beam stability and decay in COMPASS 2019 *Nucl. Fusion* **59** 096036

[2] Cerovsky J. et al 2022 JINST 17 C01033

[3] Tomeš M. et al. Feasibility study and CXRS synthetic diagnostic

model for COMPASS upgrade based on Cherab

and Raysect framework. Fusion Engineering and Design, 170, p.112498.

**Studies of Runaway electrons on tokamak GOLEM**

supervisor: Jan Mlynář

The research work will be focused on advanced studies of the Runaway Electrons (RE) phenomenon [1] on the GOLEM tokamak at CTU. It is a direct continuation of recent research dedicated to RE on GOLEM in the framework of the CAAS project at CTU [2]. The work of the candidate shall be dedicated to introduction of modern methods of the Integrated Data Analyses (IDA) linked to multiple independent measurements that have been presently used on GOLEM to study the RE. The main aims of the doctoral work are

* To carry scientific literature research with respect to IDA and RE diagnostic tools on tokamaks including their potential for the IDA.
* Get introduced to the Cherab and Raysect frameworks in Python [3], and propose their applications to the GOLEM tokamak, in particular with respect to the synthetic data generation in order to validate IDA.
* Based on the synthetic data analyses, propose novel RE experiments and carry on the corresponding RE experimental campaign on the GOLEM tokamak.
* Analyse data, possibly with a clear physical interpretation of the analyses. Alternatively, the candidate should define – based on available diagnostic data - detailed request computer modelling task that would allow to interpret RE generation in the GOLEM tokamak, RE confinement in its magnetic field, and last but not least the observed RE losses.

**References:**

[1] Ficker O. et al. Runaway electron beam stability and decay in COMPASS 2019 Nucl. Fusion 59 096036

[2] Cerovsky J. et al 2022 JINST 17 C01033

[3] Tomeš M. et al. Feasibility study and CXRS synthetic diagnostic

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