

## P4.1055 Fast observations of post-disruption runaway electron beams at the COMPASS tokamak

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See full abstract here

<http://ocs.ciemat.es/EPS2019ABS/pdf/P4.1055.pdf>

Energetic electrons, which are foreseen to be produced during disruptions in ITER, represent a potentially dangerous threat for plasma facing components [1]. Therefore, behaviour of runaway electron (RE) beams has been studied at the COMPASS tokamak in the frame of dedicated experiments focused on their generation and subsequent mitigation [2], mainly using massive gas injection. In this contribution, we introduce fast observations of the generated RE beams done by different types of high-speed cameras, AXUV detectors as a proxy of fast bolometers, ECE and hard X-ray and photo-neutron detectors [3]. Time dependence and spatial localization of RE have been investigated with respect to several aspects: formation of the beam, with a special attention to observed filamentary and quiet phases of the beam existence; interaction of the beam with the background plasma as well as with the tokamak control system; beam extinction by slow decay or by sudden termination. Tomographic inversions have been applied to data measured by the mentioned diagnostics and have proven to be a valuable source of information about beam properties. A mutual relation between the electron energy and the parameters listed above has been investigated [4].

### References

- [1] T.C. Hender et al., 2007 Nucl. Fusion 47 S128. [2] J. Mlynar et al., 2019 Plas. Phys. Contr. Fusion 61 014010. [3] V. Weinzettl et al., 2017 JINST 12 C12015. [4] M. Vlainic et al., Atoms 2019, 7, 12.

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