

## **Activation measurements and modelling on MAST Upgrade**

MAST Upgrade is equipped with two fission chambers, a collimated neutron flux monitor with multiple lines of sight and a neutron activation system. The fission chambers and the collimated neutron flux monitor have been absolutely calibrated independently of each other. The neutron activation system provides a third absolutely calibrated estimate of the neutron rates. Initial results from the first neutron calibration on MAST-U are presented here. A reasonable agreement is found between activation measurements and TRANSP/NUBEAM simulations complemented with MCNP neutron transport calculations. Comparison with fission chamber and collimated neutron flux monitor is also discussed. The encouraging results support the proposed calibration of the ITER radial neutron camera and of the fission chamber systems, as discussed in [1].

### Reference

[1] M. Cecconello et al, "Strategy and guidelines for the calibration of the ITER Radial Neutron" Fusion Engineering and Design 146 (2019) 2049–2052