**Multispectral Advanced Narrowband Tokamak Imaging Systems (MANTIS)**

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Quantitative imaging is rapidly gaining interest within the tokamak community. Multispectral imaging systems such as MANTIS can simultaneously provide integrated emission line intensity along half a million chords through the plasma for up to ten narrow spectral bands. This wealth of information allows for simultaneous hydrogen and helium spectro- scopic analyses providing an unprecedented level of insight into the edge tokamak plasmas. This work presents the working principles of the MANTIS system, together with the requirements for the narrowband interference filters that enable the system to maintain image quality in all ten cameras. The optimized filters facilitated the design of a compact iteration of the system allowing for the installation of two more six-camera systems for a more complete coverage of the poloidal cross-section in TCV. The stereoscopic tomographic inversion process is shown, highlighting the utility of multiple MANTIS systems in combating the inversion artefacts. The 2D emissivity maps are presented with their use cases; first, as the emission profiles localizing the emission-weighted spectroscopic analysis; second, for the atomic density inference in the SOL utilizing the Thomson Scattering. Then, the 2D maps of plasma parameters inferred using collisional-radiative models are shown. Finally, diverging from plasma edge application, the system’s utility in the runaway electron synchrotron emission imaging is presented.