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P2.020 Maximum Likelihood Tomographic Method for the Analysis of Bolometric Measurements on JET

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The accurate determination of the emitted radiation is an important element in the interpretation of Tokamak performance and in the design of experiments. The spatial distribution of the total emitted radiation is typically determined with quite sophisticated tomographic techniques. On JET, a new tomographic inversion method, based on the Maximum Likelihood, has been very recently developed for this purpose. Its main innovative aspect is the analytic determination of the confidence intervals in the emitted radiation levels. The method is computationally quite fast and can therefore be applied on a routine basis. Together with a systematic use of phantoms, it can have several very interesting applications. In addition to allowing a specific optimisation of the tomography for the main plasma scenarios, it permits also a systematic evaluation of various instrumental issues such as the effect of the noise, the impact of missing channels and the influence of the geometry and of systematic errors in the reconstructions. These potentialities are shown with a systematic analysis of bolometric data collected on JET during the experiments with the ITER Like Wall.

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