

Error analysis and parametric study of the JET high energy NPA

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The JET high energy neutral particle analyser measures the flux of fast neutrals originating from the plasma core. From this, the fast ion distribution function f_{FAST} , temperature T_{FAST} and density n_{FAST} are derived using knowledge of various plasma parameters and of the cross-section for the required atomic processes. Here we study the effect of uncertainties in these quantities in the evaluation of f_{FAST} . The dominant parameter affecting the n_{FAST} ion density is the impurity confinement time, whereas the T_{FAST} is not particularly affected. Independent magnetic measurement of the fast ion energy are used to refine the choice of the input data used in the neutralisation calculation.