

# EFIT EQUILIBRIUM RECONSTRUCTION INCLUDING POLARIMETRY MEASUREMENTS ON TORE SUPRA

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*To improve the accuracy of the after-shot plasma equilibrium reconstruction on Tore Supra, the previous EFIT code, which utilizes only magnetic measurements as a constraint (we shall call it EFIT-mag in the text), has been modified into EFIT-pol by taking the far infrared polarimeter measurements into account. With a correct choice of the input parameters (mainly for the  $P'$  and  $FF'$  polynomial orders and for the weights on Faraday angles), the results reconstructed by EFIT-pol are in good agreement with the experimental values deduced from the magnetic measurements as well as with the CRONOS*

*code simulations. In this paper, after a brief description of the EFIT code, the approach used to parameterize EFIT-pol is presented, and the accuracy improvement is shown for a typical shot of Tore Supra, as well as through statistics on a database of 95 shots of different plasma currents and additional powers.*

**KEYWORDS:** *equilibrium reconstruction, EFIT code, polarimeter*

*Note: Some figures in this paper are in color only in the electronic version.*