Equilibrium reconstraction and tokamak simulations with ESC-ASTRA[1]

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February 27, 2004

Equilibrium reconstruction capabilities with use of raw data from JET have been recently implemented in the Equilibrium and Stability Code (ESC), thus, allowing self-consistent simulation of equilibrium, stability and transport (typically separated).

Four codes ESC-ASTRA-DCON-BALLOON assembled in a functional package with comprehensive (and uniform) run control, instantaneous access to the On-Line Help and Data-Base organization of IO. The ESC-ASTRA tandem works in the "code talking" regime with on-the-fly test of stability using DCON and BALLOON codes.

A compact, comprehensive and easy to generate output of equilibrium codes, called Equilibrium Spline Interface (ESI), has been developed and implemented for ESC-ASTRA communications. This interface provides necessary and sufficient data to reconstruct information on equilibrium for transport, MHD stability, gyro kinetic and particle orbit codes.