Plasma reconstruction

Qian Peng APPH 4990: ITER Seminar Project Proposal Columbia University

February 16, 2011

Computation of MHD equilibrium in a plasma is very important in visualizing the plasma behavior and interpreting the measurement data from experiment. Feed back control is also kind of base on the computation result. Grad-Shafranov equation is usually used for a axial symmetric case. This project will review the technics used in solving this equation and how they are used for ITER.

References

- [1] Blum J (1987) Numerical simulation of the plasma equilibrium in a Tokamak. Computer Physics Reports 6: 275-298.
- [2] Takeda T, Tokuda S (1991) Computation of MHD equilibrium of tokamak plasma. Journal of Computational Physics 93: 1-107.
- [3] Blum J, Boulbe C, Faugeras B (2008) REAL-TIME EQUILIBRIUM RECONSTRUCTION IN A TOKAMAK. AIP Conference Proceedings 988: 420-429.