Concept for Numerical Calculation of 3D MHD Equilibria with Flow and FLR Effects

DANIEL RABURN, ATSUSHI FUKUYAMA, Kyoto University, Graduate School of Engineering — Equilibrium flows and 3D effects can significantly impact plasma stability and energy confinement. Further, in equilibria with flow, FLR effects can play an important role. Presently, there exist a number of codes which can calculate MHD equilibria with a subset of the above effects, such as: the FLOW code,[1] the PIES code [2], and a recently developed code for calculating axisymmetric equilibria with flow and hot ions in the large aspect-ratio limit [3]. Using insights gained from these codes, the concept for a new code for calculation of 3D MHD equilibria with flow and FLR effects is being developed; the code is called the Kyoto ITerative Equilibrium Solver (KITES).


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