

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Minimal ad-hoc screening coefficient from RMP x-point lobe-structures in MAST ISABELLE LEE, SASKIA MORDIJCK, WM, ANDREW KIRK, JAMES HARRISON, CCFE, WM TEAM, CCFE TEAM — Resonant Magnetic Perturbations (RMPs) have successfully been employed to mitigate ELMs by changing the pedestal pressure profile. Recently visual x-point camera data on the MAST tokamak was able to observe the creation of 3D tangle structures for various toroidal mode number applications with the RMP coils. By comparing the 2D images of the lobe structures with vacuum calculations of the tangles we can find the minimum needed plasma response to the applied RMPs. Using field line tracing to investigate whether a field line is outside or inside the experimental lobe structure, we can adjust the “effective” radial magnetic field perturbation on that a flux surface using a quick-sort algorithm until the field line remains inside the experimental observed lobe-structure. This allows us to quickly calculate a minimum ad-hoc screening that can be compared with actual complicated plasma response models.

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Date submitted: 12 Jul 2013

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