3D Equilibria for DIII-D ELM Suppression Experiments E.A.
LAZARUS[1], Oak Ridge National Laboratory — 3D equilibria have been successfully
calculated for DIII-D ELM-suppression experiments in the n=3 configuration using
the VMEC equilibrium code. These include the usual poloidal coils as well as the
I-coils that produce the perturbation suppressing the ELMs, the error correction
coils (C-coils) and the 24 discrete B-coils that produce the TF ripple. No stellarator
symmetry is assumed. Relatively minor changes to VMEC enabled such solutions
to be obtained, Details of the solutions will be discussed. Solutions take of order
a cpu-day per case. Thus far we have used $N_{fp} = 3$, and obtained solutions with
toroidal mode numbers $-24 \leq n \cdot N_{fp} \leq 24$, poloidal mode numbers $0 \leq m \leq 12$,
and 193 radial zones. We expect to increase the radial resolution and poloidal mode
upper bound. Such solutions allow investigation of the possibility that the interac-
tion of the I-coils with the TF ripple plays a role in the observed phenomenology.
Results will be presented.

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Date submitted: 29 Jul 2009   Electronic form version 1.4