

Abstract Submitted
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Including a finite element option in the VACUUM code¹ MORRELL CHANCE, Princeton Plasma Physics Lab, ALAN TURNBULL, General Atomics — One aspect of the VACUUM code² is its legacy Fourier analysis in the poloidal variable, θ , of the fields, which owed its origin to its compliance with the linear stability codes at PPPL. This may not be the optimum representation for modeling the modes currently observed in experiments and simulations. Furthermore, at present, for interfacing to the finite elements representation of say, M3D and M3D-C1, the inverse Fourier transform has to be taken to a discrete space. To alleviate these potentially numerical and representational problems, VACUUM is upgraded to include a finite element option. These are piecewise constant functions in θ . As in the Fourier method, care must be taken when addressing the singularities that is intrinsic to the Green's function technique that is used.

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²M. S. Chance, Phys. Plasmas **4** (6), June 1997.

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