

Abstract Submitted  
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**Uncertainty Propagation in OMFIT<sup>1</sup>** STERLING SMITH, ORSO MENEHINI, General Atomics, CHOONGKI SUNG, University of California - Los Angeles — A rigorous comparison of power balance fluxes and turbulent model fluxes requires the propagation of uncertainties in the kinetic profiles and their derivatives. Making extensive use of the python uncertainties package, the OMFIT framework has been used to propagate covariant uncertainties to provide an uncertainty in the power balance calculation from the ONETWO code, as well as through the turbulent fluxes calculated by the TGLF code. The covariant uncertainties arise from fitting 1D (constant on flux surface) density and temperature profiles and associated random errors with parameterized functions such as a modified tanh. The power balance and model fluxes can then be compared with quantification of the uncertainties. No effort is made at propagating systematic errors. A case study will be shown for the effects of resonant magnetic perturbations on the kinetic profiles and fluxes at the top of the pedestal. A separate attempt at modeling the random errors with Monte Carlo sampling will be compared to the method of propagating the fitting function parameter covariant uncertainties.

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