Geometry and Modeling of Single ITER Antenna Module[1] DAVID
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ROARK, Tech-X Corporation — We present FDTD simulations of a single ITER
antenna module in cold-test, and in the vicinity of representative edge plasma. We
cover the construction of the module geometry from both CAD data and from para-
metric representation. Simulations with plasma will also look at RF sheath poten-
tials using the time- domain sheath sub-grid model, as this work provides the first
practical full-scale application of this model. At this stage, we push the simulation
volume as large as possible for both office-cluster scale and super-computing scale
platforms, and explore the feasibility of extending the computations to a partial or
full ensemble of modules. This work also includes the creation of post-analysis and
visualization scripts targeted for the large datasets implied by these computations,
which will also form the core analysis tools to provide predicted figures-of-merit, such
as impedance loading, peak field strengths, and areas of significant sheath voltage.
We present a summary of progress in this area as well.

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