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Time-Dependent Distribution Functions in C-Mod Calculated with the CQL3D-Hybrid-FOW, AORSA Full-Wave, and DC Lorentz Codes[1] R.W. (BOB) HARVEY, YU.V. PETROV, CompX, E.F. JAEGER, L.A. BERRY, EXCEL Engineering, P.T. BONOLI, MIT, A. BADER, Univ. of Wisconsin — A time-dependent simulation of C-Mod pulsed ICRF power is made calculating minority hydrogen ion distribution functions with the CQL3D-Hybrid-FOW finite-orbit-width Fokker-Planck code. ICRF fields are calculated with the AORSA full wave code, and RF diffusion coefficients are obtained from these fields using the DC Lorentz gyro-orbit code. Prior results with a zero-banana-width simulation using the CQL3D/AORSA/DC time-cycles showed a pronounced enhancement of the H distribution in the perpendicular velocity direction compared to results obtained from Stix's quasilinear theory, in general agreement with experiment. The present study compares the new FOW results, including relevant gyro-radius effects, to determine the importance of these effects on the the NPA synthetic diagnostic time-dependence. The new NPA results give increased agreement with experiment, particularly in the ramp-down time after the ICRF pulse.

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