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Relativistic, Continuum DKE in NIMROD: Test Particle Operator Results¹ TYLER MARKHAM, ERIC HELD, JEONG-YOUNG JI, ANDREW SPENCER, Utah State Univ — A “runaway” electron is an electron that, through a self-reinforcing process, accelerates to relativistic speeds. At multiple points throughout tokamak operation, relativistic runaway electron (RE) beams can form. RE beams pose a very serious risk in form of severe damage in ITER and future burning plasma reactors. This talk focuses primarily on the extension of the NIMROD code’s kinetic capability by treating relativistic populations of electrons and their interactions with plasma fluid models. Specifically, results of the implementation of a relativistic test particle operator in NIMROD will be shown.

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