Verification of Hermes-2: A 2-fluid plasma model including hot ions[1] NICOLAS DESTEFANO, SASKIA MORDIJCK, William & Mary, BEN DUDSON, University of York — Hermes-2 extends the Hermes-1 to include hot ions. Hermes is built on the BOUT++ framework and is a 5/6-field reduced 2-fluid plasma model for the study of instabilities and turbulence in magnetized plasmas. It evolves global profiles, electric fields and flows on transport timescales, with flux-driven cross-field transport determined self-consistently through plasma turbulence. In order to verify Hermes-2 captures the correct physics we will compare its results to analytic drift-wave solutions. At first setting the ions to cold, we will reproduce the Hermes-1 results, which have been verified. In the second part we will compare the impact of the hot ion component by including an ion temperature gradient and compare the Hermes-2 results to analytic predictions for different wave lengths and changes in η_i, collisionality and ion temperature.

Nicolas DeStefano
William & Mary

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