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A multi-term Boltzmann equation based global model for low temperature plasmas JACOB STEPHENS, Massachusetts Institute of Technology — This report demonstrates the application of a time-dependent multi-term Boltzmann equation (BE) model, utilized as the central construct of a global model for low temperature plasma modeling. As opposed to utilizing pre-computed solutions to the BE, this model solves the BE self-consistently with global model. This also eliminates the energy conservation equation regularly employed in global models of low temperature plasmas. As a brief demonstration, the BE based global model is utilized for the efficient prediction of high power microwave induced plasma formation over a range of experimental conditions.

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