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**ASTRA Simulation Results of RF Propagation in Plasma Medium** JOSHUA GOODWIN, BRANDON ONEAL, AARON SMITH, Claffin University, Orangeburg, SC, SUDIP SEN, College of William & Mary, Claffin University, National Institute of Aerospace — Transport barriers in toroidal plasmas play a major role in achieving the required confinement for reactor grade plasmas. They are formed by different mechanisms, but most of them are associated with a zonal flow which suppresses turbulence. A different way of producing a barrier has been recently proposed which uses the ponderomotive force of RF waves to reduce the fluctuations due to drift waves, but without inducing any plasma rotation. Using this mechanism, a transport coefficient is derived which is a function of RF power, and it is incorporated in transport simulations performed for the Brazilian tokamak TCABR, as a possible test bed for the theoretical model. The formation of a transport barrier is demonstrated at the position of the RF wave resonant absorption surface, having the typical pedestal-like temperature profile.

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