**Effects of Elongation on Stochastic Layer and Magnetic Footprint in Divertor Tokamaks** HASINA WADI, MORGIN JONES, HALIMA ALI, ALKESH PUNJABI, Center for Fusion Research and Training, Hampton University, Hampton, VA 23668 — An area-preserving map is constructed to calculate effects of elongation on the stochastic layer and magnetic footprint in divertor tokamaks. The generating function for the map is $S(x,y) = -(1/2)\alpha^2 y^2 (1-y^2/2a^2)+(1/2)\beta^2 x^2$. Method of maps developed by Punjabi and Boozer [1,2] is used to construct the map and to calculate the stochastic layer and the magnetic footprints. The poloidal magnetic flux inside the ideal separatrix and the safety factor profile are held constant, and elongation is varied by (1) varying the width of separatrix surface in the midplane keeping the height fixed, and (2) varying the height keeping the width of separatrix surface fixed. As the width is increased, the stochastic layer and the footprint become narrower. As the height is increased, the width of stochastic layer and the footprint become narrower. Detailed results of this study will be presented. This work is supported by US DOE OFES DE-FG02-01ER54624 and DE-FG02-04ER54793.

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