1048-60-183 **Amarjit Budhiraja*** (amarjit@unc.edu), Department of Statistics and OR, University of North Carolina, Chapel Hill, NC 27516, and **Rami Atar**, Department of Electrical Engineering, Technion, Haifa, Israel. *Elliott-Kalton Stochastic Differential Games Associated with the Infinity Laplacian.*

In a recent work, Peres, Schramm, Sheffield, Wilson [PSSW] have considered a two player, zero sum, discrete time stochastic game, called Tug of War. In this game two competing players are allowed to drive the state dynamics in a bounded domain with step sizes bounded by c. The game ends at the first time instant when the boundary is reached with a payoff given in terms of a terminal cost function and a suitably scaled running cost. Player 1 seeks to maximize the expected payoff while Player 2 aims to minimize it. It is shown in [PSSW] that if the running cost is bounded away from zero then the game has a value u(c) and as c approaches 0, u(c) converges uniformly to the "continuum value" u which is the unique viscosity solution of an inhomogeneous infinite Laplace equation with a Dirichlet boundary data. In this work we consider a continuous time two player zero sum stochastic differential game that is motivated by the Tug of War game. We show that, under certain conditions, the game has a value in the usual Elliott-Kalton sense which is characterized as the unique viscosity solution of the equation in [PSSW]. Thus the result provides a game theoretic interpretation for the "continuum value" in the [PSSW] analysis. (Received February 06, 2009)