1067-60-1301   **Jie Xiong*** (`jxiong@math.utk.edu`), Department of Mathematics, The University of Tennessee, 104 Aconda Court, Knoxville, TN 37996-1000. *SBM as the unique strong solution to an SPDE.*

A stochastic partial differential equation (SPDE) is derived for the super Brownian motion regarded as a distribution function valued process. The strong uniqueness for the solution to this SPDE is obtained by a connection between SPDEs and backward doubly stochastic differential equations. Similar results are also proved for the Fleming-Viot process. A further uniqueness result is obtained when the branching rate or the spatial motion of the particles depends on the population in a suitable way. As a consequence, the uniqueness in law for a class superprocesses with interaction is derived. (Received September 20, 2010)