Abstract Submitted
for the APR09 Meeting of
The American Physical Society

New Diffusion Analysis Tools for Beam Beam Simulations VAHID RANJBAR, ANDREY SOBOL, Tech-X Corp, TANAJI SEN, HYUNG JIN KIM, FNAL — A new set of tools for BBSIM has recently been developed to analyze the nature of the diffusion in multi-particle simulations. The diffusion subroutines are currently used to accelerate beam lifetime calculations by estimating the diffusion coefficient at various actions and integrating the diffusion equation. However it is possible that there may be regimes where anomalous diffusion dominates and normal diffusion estimates are incorrect. The tools we have developed estimate the deviation from normal diffusion and can fit the coefficients of a jump diffusion model in the event that this type of diffusion dominates.

Vahid Ranjbar
Tech-X Corp

Date submitted: 14 Jan 2009 Electronic form version 1.4