1054-46-284　　　　**Jason Asher*** (`asherj@math.ucla.edu`). *Free Diffusions and von Neumann Algebras.*

We establish technical properties of von Neumann algebras that are generated by the sationary laws of certain free stochastic differential equations. In particular, we consider the free diffusion equation $dX_t = dS_t - \frac{1}{2}DV(X_t)dt$ for a suitably locally convex self-adjoint multivariate polynomial V. We will make use of results of Guionnet and Shlyakhtenko that give existence and uniqueness of, and asymptotic norm convergence to, stationary solutions of such SDE. (Received September 15, 2009)