

1135-60-1318      **Padmanabhan Sundar\*** (psundar@lsu.edu), Department of Mathematics, Lockett Hall,  
Louisiana State University, Baton Rouge, LA 70803. *Stochastic analysis of the Enskog equation.*

A stochastic differential system with jumps that corresponds to the Enskog equation in the kinetic theory of gases is studied under a suitable set of conditions. The existence of a weak solution and the uniqueness of marginal distributions of any solution to the system are established. The existence of a probability density for the time-marginals of the velocity is verified in the case where the initial condition is Gaussian, and is shown to be the density of an invariant measure. This is a joint work with S. Albeverio and B. Ruediger. (Received September 21, 2017)