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**Padmanabhan Sundar\***, Department of Mathematics, Lockett Hall, Louisiana State University, Baton Rouge, LA 70803. *Probabilistic Analysis for the Enskog Equation.*

The Boltzmann equation describes the time evolution of the density of gas particles for a given initial distribution. A non-localized form of it is the Enskog equation, and its solution is identified with the law of the solution of a McKean-Vlasov system driven by a Poisson random measure. An interacting system of  $N$ -particles with binary collisions is considered in order to establish the existence of weak solutions to the Enskog equation, in the limit as  $N \rightarrow \infty$ . The talk is based on joint works with S. Albeverio, M. Friesen, and B. Rüdiger. (Received January 19, 2018)