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Section:

12. Probability and Statistics

1991 MS Classification: 60, 82, 65
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Stochastic particle systems approximating the stationary Boltzmann equation

We consider a stochastic n-particle system in a bounded domain with diffusive boundary conditions. We study the distance between the stationary measure for the particle system and the measure given by the n-fold product of the solution to the regularized stationary Boltzmann equation with the same boundary conditions. We show that, if the mean free path inverse is sufficiently small, the L_1-difference between the k-particle distribution functions of such two measures vanishes in the limit $n \to \infty$, for any fixed k, with the order $\frac{1}{n}$.
Reference: S. Caprino, M. Pulvirenti, and W. Wagner, "Stationary particle systems approximating stationary solutions to the Boltzmann equation", *SIAM J. Math. Anal.* (1998). To appear.