



WORCESTER POLYTECHNIC INSTITUTE

PHYSICS MINOR CAPSTONE PROJECT

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# Verification of the Kinetic Theory of Gasses Through Simulation

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### **Abstract**

The Kinetic Theory of Gasses developed by Maxwell and Boltzmann derives macroscopic properties of gasses, such as temperature and pressure, from the kinetic particle interactions at microscopic levels. The maxwell-Boltzmann distribution for particle velocity is the probability density function that gives the probability that any given gas particle will have the given velocity. It assumes the components of the three dimensional velocity vector are normally distributed with a mean of zero.