

Abstract Submitted  
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**Laboratory experiment to measure the Maxwell speed distribution in two dimensions**<sup>1</sup> JOSEPH KERTZ, SHON WATSON, MICHAEL SADLER, Abilene Christian University — A video of objects traveling on an air table in two dimensions can be used to measure their speed distribution and compare to the Maxwell distribution. Students track an object (puck) from a one-minute video taken at 30 frames per second, giving 1800 measurements of position and speed. During this time the puck experiences multiple collisions with each other and the walls. Various video analysis packages are available to extract the puck positions and velocities. Data from multiple students (tracking different pucks) are combined to give a robust statistical sample and to compare to the theoretical prediction. The technique will be demonstrated and results from a recent lab will be presented. The laboratory is appropriate for students studying thermodynamics in introductory physics.

<sup>1</sup>Laboratory experiment to measure the Maxwell speed distribution in two dimensions

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