

Application of G-jitter Calculations to Microgravity Measurements Near The Liquid-Gas Critical Point of  $^3\text{He}$ .  
JOSEPH RUDNICK, Department of Physics, University of California, Los Angeles and M. BARMATZ, Jet Propulsion Laboratory, California Institute of Technology.---We consider the various effects that random motion will have on an experiment that measures the critical point properties of a simple liquid-gas system in a microgravity environment. We will present results of an application of a recent critical fluctuation calculation [R. Ferrell, *Ann Phys.* 2, 26 (1993)] to assess the influence of "g-jitter" on measurements when the system is  $^3\text{He}$  and when the power spectrum of small, random accelerations corresponds to typical spectra measured in the Space Shuttle. We are now extending Ferrell's approach to determine the effects of random motion on additional properties of a simple liquid-gas system near its critical 'point. Progress in the development of this new approach will also be presented, [Work supported by NASA].