The resistible effects of Coulomb interaction on nucleus-vapor phase coexistence

L. G. Moretto, J. B. Elliott, L. Phair Nuclear Science Division, Lawrence Berkeley National Laboratory, University of California, Berkeley, California 94720

abstract We explore the effects of Coulomb interaction upon the nuclear liquid vapor phase transition. Because large nuclei (\(A > 60\)) are metastable objects, phases, phase coexistence, and phase transitions cannot be defined with any generality and the analogy to liquid vapor is ill-posed for these heavy systems. However, it is possible to account for the Coulomb interaction in the decay rates and obtain the coexistence phase diagram for the corresponding uncharged system.