Novel Numerical Computations for the Equation of State of Hard Particle Systems from Gaseous to Extreme High Densities UDUZEI EDGAL, Old Dominion University — A special form of the "Reduced Monte Carlo Scheme" (RMCS) used for numerical computation of the EOS of the hard particle system (2D and 3D cases) will be discussed. A major advantage of the numerical scheme is that it does not lead to difficulties with meta-stable states as do traditional MC methods. In particular, RMCS calculations (in the special form) provide results from the lowest (fluid phase) to the highest (solid phase) densities which show a first order phase transition in the hard particle system

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