

Abstract Submitted  
for the TSS18 Meeting of  
The American Physical Society

**Density Functional Theory study of first order phase transition in 2D lattice fluid** ALEXANDRIA MENDOZA, DAVID WINSKI, McMurry Univ  
— The Density Function Theory is used to calculate phase diagrams and interfacial properties in two-dimensional lattice fluid. In order to accomplish this, simplifications had to be made to the lattice fluid model. First, only the nearest neighbor and next-nearest neighbor interactions were accounted for. Second, the fluid was taken into consideration without any external field present. With these simplifications, thermodynamic potentials could be found as functions of density. The density profiles for one and two dimensional liquid-vapor interfaces were studied at different temperatures and different supersaturations. The behavior of the surface tensions for a planar and curved liquid-vapor interface was studied as well.

Alexandria Mendoza  
McMurry Univ

Date submitted: 09 Mar 2018

Electronic form version 1.4