

# Coulomb and Surface Effects on “Pasta” Phases in Nuclear Matter.

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We consider the first-order phase transitions of nuclear matter such as liquid-gas phase transition, kaon condensation, and hadron-quark phase transition. Since nuclear matter consists of charged particles, the mixed phase exhibits non-uniform structures called “Pasta”, i.e. droplet, rod, slab, tube, and bubble. “Pasta” structures appear due to the balance of the Coulomb repulsion and the surface tension between two phases. As a general feature of the mixed phase consisting of many species of charged particles, we show the effects of the charge screening and the surface tension on the equation of state and size of the structures.