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Chiral symmetry restoration and deconfinement in Coulomb Gauge QCD PENG GUO, ADAM SZCZEPANIAK, Nuclear Theory Center and Physics Department, Indiana University, Bloomington, IN 47405 — Phenomenology of QGP has attracted a lot of attention in recent years. In the framework of Coulomb Gauge QCD we explore dynamical spontaneously breaking of chiral symmetry of QCD vacuum and confinement. In the extension of quasi-quark model at finite temperature and density, we investigate the relation of chiral symmetry restoration and deconfinement as a function of temperature and density. We will show how the confinement potential behaves depending on screening effects once the temperature and density is increased and also at what condition a de-confined potential will generate the chiral symmetry restoration. Possible appearance of the quarkyonic phase will be discussed.

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