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TITLE: Searching for CP-violation at Heavy Ion Collisions at RHIC

The QCD Lagrangian contains a term, the so called Θ-QCD term, that violates both parity (P) and time (T) symmetries. The strict experimental limit on the electric dipole moment (EDM) of the neutron constraints the value of Θ-QCD to be less than about 10^{-10} rad, whereas it was expected to be of order one. In one of the models solving this fine-tuning problem the Θ-QCD becomes a dynamical variable and acquires a value near zero when the universe cools below Λ-QCD.

In heavy ion collisions it is estimated that one might be creating hot spots where the Θ-QCD acquires a non-zero value depending on the local temperature. Those bubbles are sources of P and T violating processes and (assuming CPT-invariance) of CP-violation. One way of looking for those bubbles is to look for charge asymmetries in heavy ion collisions at RHIC with respect to the interaction plane. The status and promise of this investigation will be presented.