



Heavy Ion Forum

SPEAKER: Patel Apoorva
TITLE: **Flux Tube Model Signals in Heavy Ion Collisions**

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ABSTRACT

The cross-over region of the quark-gluon plasma (QGP) created in heavy ion collisions is influenced by the nearby deconfinement, chiral and baryon condensation phase transitions. A characteristic signature of the deconfinement transition in this region can be inferred using the flux tube model, which is dual to the Polyakov loop description and which offers a visual picture of what happens during the transition. The three-point (anti)vertices of a flux tube network lead to formation of (anti)baryons upon hadronisation. Therefore, correlations in the baryon number distribution at the last scattering surface directly reflect the preceding pattern of the flux tube vertices in the QGP. An alternating pattern of vertices and antivertices should lead to an oscillatory signal in the two-point baryon number correlations, under the experimental conditions prevalent in heavy ion collisions. Moreover, fragmentation of a flux tube network by quark-antiquark pair creation describes hadron multiplicities at the stage of chemical freeze-out.