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Rotating Quark Gluon Plasma in cylindrical geometry.

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We study the effect of rotation on the confining and chiral properties of QCD using the linear sigma model with quarks coupled to the Polyakov loop in an attempt to resolve discrepancies between the first principle numerical and model-based analytical results. The rotational effects are incorporated through the formulation of this quasiparticle model in an effectively curved space-time metric. Ensuring the causality through spectral boundary condition in the curved co-rotating background, we obtain the phase diagrams in $T-\mu$ and $T-\Omega$ planes. A splitting between the confinement and chiral phase transitions is discussed as a boundary effect. Finally, we also present a study of the moment of inertia as a function of angular frequency at different radii of the cylindrical system under consideration.

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