Contribution ID: **69** Type: **not specified**

Dynamical locking of the chiral and the deconfinement phase transition in QCD at finite chemical and isospin chemical potential

Tuesday 9 September 2014 16:50 (20 minutes)

Studies of the QCD phase diagram at finite temperature and quark chemical potential are currently one of the most discussed topics in theoretical physics and are of great importance to better our understanding of heavy-ion collision experiments. However, the relation of confining and chiral dynamics is not yet completely understood. At vanishing chemical potential, results from lattice QCD indicate that the chiral and the deconfinement phase transition lie close to each other. In this talk, we analyze the fixed-point structure of four-fermion interactions in two-flavor QCD and show that there indeed appears to be a mechanism which dynamically locks the chiral phase transition to the deconfinement phase transition, both at vanishing and at finite quark chemical potential. As a direct consequence, this observation suggests that the chiral phase transition to the deconfinement phase transition temperatures lie close to each other, at least for small quark chemical potentials.

Authors: Prof. BRAUN, Jens (Technische Universität Darmstadt); Mr LEONHARDT, Marc (Technische Universität Darmstadt); SPRINGER, Paul (Technische Universität München)

Presenter: SPRINGER, Paul (Technische Universität München)

Session Classification: Parallel IV: D8 Deconfinement

Track Classification: Section D: Deconfinement