

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**Inhomogeneous Polyakov loop induced by inhomogeneous chiral condensates** TOMOYA HAYATA, ARATA YAMAMOTO, Univ. of Tokyo — Inhomogeneous chiral condensates have been actively studied at finite temperatures and densities using chiral effective models. We study inhomogeneous Polyakov loop induced by such inhomogeneous chiral condensates in quenched lattice QCD simulation. For this purpose, we construct an effective model of gluons on the background fields of inhomogeneous chiral condensates. We show that the Polyakov loop exhibits a spatial oscillation parallel to that of chiral condensates, which indicates a possible coexistence of inhomogeneous Polyakov loop and chiral condensates. We also study the anisotropic heavy quark potential obtained from the inhomogeneous Polyakov loop correlation function.

Tomoya Hayata  
Univ. of Tokyo

Date submitted: 28 Jun 2014

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