APS DIVISION OF PARTICLES & FIELDS
DPF 2017
MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: **255** Type: **Presentation**

Thermodynamics of SU(4) gauge theory with fermions in multiple representations

Tuesday, 1 August 2017 11:01 (16 minutes)

We study the phase structure of SU(4) gauge theory with dynamical quarks in both the fundamental and two-index antisymmetric representations. Such "multi-representation" theories have been speculated to exhibit separated phase transitions, but our lattice calculations suggest the existence of only a single thermal phase transition: both species of fermion appear to confine and break chiral symmetry simultaneously. We investigate the order of the combined phase transition in various limits of the theory, and compare to theoretical expectations based on chiral symmetry.

Primary author: HACKETT, Daniel (University of Colorado, Boulder)

Co-authors: Prof. SVETITSKY, Benjamin (Tel Aviv University); Prof. NEIL, Ethan (University of Colorado, Boulder); Prof. DEGRAND, Thomas (University of Colorado, Boulder); Dr AYYAR, Venkitesh (University of Colorado, Boulder); JAY, William (University of Colorado, Boulder); Prof. SHAMIR, Yigal (Tel Aviv University)

Presenter: HACKETT, Daniel (University of Colorado, Boulder)

Session Classification: Beyond Standard Model

Track Classification: Beyond Standard Model