



Contribution ID: 407

Type: Talk

## Spectrum of the $SU(4)$ lattice gauge theory with fermions in the anti-symmetric two index representation

*Friday, 27 June 2014 17:10 (20 minutes)*

We study the  $SU(4)$  lattice gauge theory with  $N_f=2$  Dirac fermions in the anti-symmetric two index (sextet) representation (the  $SU(4)/\text{sextet}$  theory). This is a real fermion representation, which allows simulation at non-zero chemical potential with no sign problem. In addition,  $SU(4)/\text{sextet}$  is an interesting generalization of QCD, allowing direct exploration of an alternate large- $N_c$  expansion with fermions in the sextet representation. In this talk, I will present our preliminary results on the baryon and meson spectrum of the theory and compare them with  $SU(3)$  results and large- $N_c$  scaling.

**Primary author:** Dr LIU, Yuzhi (University of Colorado, Boulder)

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

**Presenter:** Dr LIU, Yuzhi (University of Colorado, Boulder)

**Session Classification:** Physics beyond the standard model

**Track Classification:** Physics Beyond the Standard Model