Contribution ID: **1** Type: **Talk**

Instanton-dyons induce both the chiral symmetry breaking and confinement

Tuesday, 24 June 2014 14:55 (20 minutes)

QCD topology – mostly instantons – had been used in the past to explain near-zero Dirac states and chiral symmetry breaking. At $T \sim T_c$ instanton are known to get
decomposed into N_c instanton-dyons. Several lattice observation were naturally
explained by instanton-dyons.
Their partition function is now numerically generated: the statistical ensemble is then used to get spectrum of Dirac eigenstates: that is found
to produce both chiral broken and restored (gapped) spectra, as a function of T and N_f. Another development is account for the back reaction, from dyons to holonomy potential. Somewhat unexpectedly, that was recently shown to induce a (quasi) confining phase transition, in which the Polyakov line jumps to zero value.

Primary author: Prof. SHURYAK, Edward (Stony Brook)

Presenter: Prof. SHURYAK, Edward (Stony Brook)

Session Classification: Vacuum Structure and Confinement

Track Classification: Vacuum Structure and Confinement