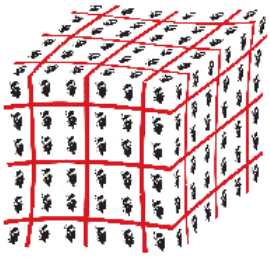

Contribution ID: **5** Type: **not specified**

Magnetic-Field-Induced insulator-conductor transition in quenched lattice gauge theory

Tuesday, 15 June 2010 08:30 (20 minutes)

We study the correlator of two vector currents in quenched lattice gauge theory with chirally invariant lattice Dirac operator with constant external magnetic field. It is found that in the confinement phase the correlator of the components of the current parallel to the magnetic field decays much slower than in the absence of magnetic field, while for other components the correlation length slightly decreases. We apply the Maximal Entropy Method to extract the spectral function which corresponds to this correlator. The value of this spectral function in the limit of zero frequency yields, by virtue of the Green-Kubo relations, the electric conductivity of quenched lattice gauge theory. In the confinement phase the magnetic field induces nonzero electric conductivity, but only in the direction of the field. In the deconfinement phase the conductivity practically does not depend on the magnetic field.

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talk

Primary author: BUIVIDOVICH, Pavel (ITEP (Moscow, Russia) and JINR (Dubna, Russia))

Co-author: Prof. POLIKARPOV, Mikhail (ITEP (Moscow, Russia))

Presenter: BUIVIDOVICH, Pavel (ITEP (Moscow, Russia) and JINR (Dubna, Russia))

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