

Bianchi Identities and Chromomagnetic Fields Degeneracy in SU(2) Gluodynamics

Presenter: Fedor Gubarev

F.V. Gubarev, S.M. Morozov

Abstract: We consider the non-Abelian Bianchi identities and the relevance of the chromomagnetic fields degeneracy points in SU(2) pure Yang-Mills theory in D=3,4. We show that the non-Abelian Stokes theorem allows to formulate the Bianchi identities in terms of the physical fluxes and their relative color orientations. The violation of Bianchi identities becomes a well defined concept ultimately related to the degeneracy points. We present the numerical evidence that in D=4 the suppression of the Bianchi identities violation destroys confinement while the removal of the degeneracy points drives the theory to the topologically non-trivial sector.