Characterization of the pure-glue phase transition in QCD: Inclusion of the 2-body interactions thanks to the T-matrix formalism.

Tuesday, 9 October 2012 18:12 (18)

Understanding the QCD phase transition is a fascinating topic since RHIC and LHC have pointed out some evidences of the existence of the Quark-Gluon Plasma (QGP). From a theoretical point of view, the understanding of the QGP has motivated in particular many lattice QCD studies, focusing mostly on the structure of the QCD phase diagram, but also a great number of works resorting to phenomenological approaches. These approaches can provide us a more intuitive picture of the physical mechanisms underlying the QCD phase transition and characterising the QGP.

In this seminar, we address the question of the existence of bound states and of the equation of state in pure glue QCD in the deconfined phase. Our approach is a quasiparticle approach in which we have explicitely taken into account the 2-body interactions thanks to the T-matrix formalism. Within the same formalism, we are able to show that glueballs may exist after deconfinement and that the obtained equation of state agrees well with recent lattice data.

**Summary**

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**Session Classification:** Session D: 8

**Track Classification:** Section D: <i>Deconfinement</i>