

ICTS String Seminar

- Title : Thermal order in large N conformal gauge theories
- Speaker : Soumyadeep Chaudhuri (Hebrew University, Israel)
- Date : Wednesday, 04 November 2020
- Time : 03:00 pm (IST)
- Abstract : Our experience with many physical systems (eg. magnets) tells us that usually when a symmetry is spontaneously broken at low temperatures, it is restored upon increasing the temperature sufficiently. The abundance of such systems raises the question of whether this is a universal feature of all quantum systems. In this talk, I will present examples of (3+1)-dimensional non-supersymmetric large N gauge theories which demonstrate violations of the above feature. I will argue that in the N tending to infinity limit, these theories have conformal manifolds which survive under all loop corrections to the beta functions of the couplings. I will show that under certain conditions, a subset of points on such a conformal manifold demonstrates the spontaneous breaking of a global symmetry at all nonzero temperatures. Furthermore, I will demonstrate that this symmetry breaking is accompanied by the Higgsing of a subset of gauge bosons leading the system to be in a persistent Brout-Englert-Higgs phase.

ICTS virtual seminar : Please register at <https://docs.google.com/forms/d/e/1FAIpQLSf0jLgoqiOgDnxbEBGiuIWiOmh9WX8caH-pr13qDBZOO91lmg/viewform>

(Links to join the seminars will be sent to your registered email address)

Recordings of past talks can be found here:

<https://www.youtube.com/channel/UCw9LdPQ5t7Q7muD0qzn70TA>