ICTS M.Sc Project Seminar

Title : KMS relation for anyons

Speaker : Aswin Parayil Mana, ICTS-TIFR, Bangalore

Date : Thursday, July 30, 2020

Time : 11:30 AM

Venue : Online seminar (Please use this link to join the seminar - https://us02web.zoom.us/j/84765284448?pwd=d2JjewzTC9nK3J5UmZjL2UxNC9YUT09

Meeting ID: 847 6528 4448
Passcode: RQgs3T)

Abstract : In this seminar, we will look at fundamental fermion coupled to Chern Simons gauge field to derive the anyonic KMS relations. First, we will review the work of Aharony et al on the non-perturbative/exact calculation of Euclidean thermal interacting two-point function of the fermions in the large N limit. Working in the light-cone gauge, one finds that the self-energy diagrams can be found exactly by solving the appropriate Schwinger-Dyson equation.

Analogously, we set up the Schwinger Dyson equation for the exact real-time two-point functions for fermions in the large N limit using techniques in Schwinger Keldysh formalism. Mimicking the procedure for solving the Euclidean self-energy, we solve for the real-time thermal large N self-energy. We prove that when one takes the initial time of the SK contour to past infinity and hence, assume, left Green's function and right Green's function are zero, the KMS condition for the dressed fermionic propagator remains the same as that of the free propagator. After proving the KMS relation for the two-point function, we will look at the set up for finding the KMS relation for the four-point function.