Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

A test of bosonization at the level of four-point functions in Chern-Simons vector models

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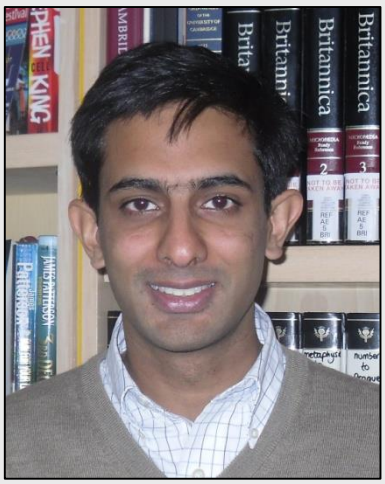

Date: October 19, 2015
Time: 11.30 am
Venue: A-304, TIFR

(Duration and Location are subject to irreducible jitter)

We study four-point functions in Chern-Simons vector models in the large N limit. We compute the four-point function of the scalar primary to all orders in the 't Hooft coupling λ=N/k in U(N)_k Chern-Simons theory coupled to a fundamental fermion, in both the critical and non-critical theory, for a particular case of the external momenta. These theories cover the entire 3-parameter 'quasi-boson' and 2-parameter 'quasi-fermion' families of 3-dimensional quantum field theories with a slightly-broken higher spin symmetry. Our results are consistent with the celebrated bosonization duality, as we explicitly verify by calculating four-point functions in the free critical and non-critical bosonic theories.

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