Séminaire de physique mathématique

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Lundi 25/01/2021, 11:00

$\boxed{\textbf{(voir dans annonce)}}$

Infinite pseudo-conformal symmetry in classical TTbar, JTbar and JTa-deformed CFTs

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    I will start with a brief review of the irrelevant current-current deformations of two-dimensional QFTs introduced by Smirnov and Zamolodchikov, concentrating on the $T\bar{T}$, $J\bar{T}$ and JT_a ones. I will then show that classical $T\bar{T}$, $J\bar{T}$ and JT_a -deformed CFTs possess an infinite set of symmetries that take the form of a field-dependent generalization of two-dimensional conformal and, if applicable, $U(1)$ transformations. The Poisson bracket algebra of the associated conserved charges consists of two commuting copies of a functional Witt - (Kač-Moody) algebra. One notes, however, that at semi-classical level on a cylinder, the equal spacing of the descendants' energies predicted by such a symmetry algebra is inconsistent with the known finite-size spectrum of the deformed CFTs. I will show how to resolve this tension in the specific case of $J\bar{T}$ - deformed CFTs, by exhibiting a new set of (classical) conserved charges, which are related to the previous symmetry generators by a type of energy-dependent spectral flow. The above results suggest then that $T\bar{T}$, $J\bar{T}$ and JT_a -deformed CFTs correspond to non-local versions of usual two-dimensional conformal field theories, a structure that would be interesting to explore further.

The seminar is online only.
Internet link to be collected from the Organizer: Vincent Pasquier (vincent.pasquier@ipht.fr)