Universität Bielefeld Fakultät für Physik

Mathematical Physics Seminar

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CFT and SLE in a doubly connected domain

In this talk, I will present certain implementations of conformal field theory (CFT) in a doubly connected domain. The statistical fields in these implementations are generated by central charge modifications of the Gaussian free field with excursion reflected/Dirichlet boundary conditions.
I will explain Ward's equation in terms of a stress energy tensor, Lie derivative operators and the modular parameter. Combining Ward's equation with the level 2 degeneracy equation for the boundary condition changing operator, I will outline the relation between CFT and Schramm-Loewner Evolution (SLE) theory.
As applications, I will present a version of restriction property and Friedrich-Werner's formula for annulus SLE and explain how to apply the method of screening to find explicit solutions of the partial differential equations for the annulus SLE partition functions introduced by Lawler and Zhan.
This is based on joint work with Nam-Gyu Kang and Hee-Joon Tak.

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