Bootstat 2021: Conformal bootstrap and statistical models



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Four-point cluster connectivities in the 2d critical Q-state Potts model

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A signature example of the 2d geometric phase transition is the critical percolation, and one of the fundamental observables involves correlation functions describing connectivities of a number of points in terms of cluster configurations. Such quantities can be approached in a field theory language through the Fortuin-Kasteleyn formulation of the Q-state Potts model.

In this talk I will consider the four-point cluster connectivities in the critical model. Connections with the lattice formulation of minimal models are made which provide insights of the structure of the Potts spectrum. This allows to deduce the existence of "interchiral conformal blocks" which can be constructed using the degeneracy in the spectrum. Using these, I will then bootstrap the four-point connectivities.

The talk is based on 2002.09071 and 2005.07258.

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