Bootstat 2021: Conformal bootstrap and statistical models



ID de Contribution: 42

Type: Lecture / lecture series

Upper critical dimension of the 3-state Potts model

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The 3-state Potts model has a unitary second order phase transition in spacetime dimension d=2, which is defined by an exactly solvable minimal model called the critical Potts model. There is also another 2d minimal model called the tricritical Potts model which has the same symmetries but one extra relevant operator. As d increases, these two fixed points are expected to merge and go off into the complex plane, so that the unitary second order phase transition disappears.

We find non-perturbative evidence for this scenario from the numerical conformal bootstrap, which suggests that the critical Potts model disappears for d<3.

Orateur: CHESTER, Shai (Weizmann Institute)

Classification de thématique: 2. Statistical physics targets