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Analytical bootstrap for the O(3) magnetic impurity

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Extended operators such as defects are of fundamental importance in conformal field theories, with applications both to high energy theory and to condensed matter systems at criticality. Recently, analytic bootstrap techniques have been successfully applied to investigate these objects.

In this talk, we will focus on the O(3) magnetic impurity, which at the fixed point is described by a defect conformal field theory. Firstly, we will use symmetries and renormalization group techniques to study the light defect spectrum of this model the 4-ε expansion, which turns out to be quite rich. Once the defect spectrum is known, analytic bootstrap techniques are applied to bulk two-point functions to extract an infinite amount of new dCFT data.

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