

NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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Numerical Six-point Bootstrap

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The numerical conformal bootstrap rigorously bounds OPE data of unitary CFTs by excluding solvability of four-point crossing equations through semi-definite programming techniques. Extending to multi-point correlators can provide access to new data that could otherwise only be extracted from infinite four-point systems. Indeed, recent work of D. Poland, V. Prilepina and P. Tadić shows that numerically solving truncated crossing equations for five-point correlators produces approximate OPE data with reasonable heuristic estimates of the errors. However, it remains unclear how the constraints set by unitarity could be exploited in a multi-point setting, leading to rigorous bounds analogous to those of the four-point bootstrap. The purpose of this talk is to make a concrete proposal for achieving this goal through six-point correlators. The proposal is supported by numerical results of a 1d implementation.

Summary

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