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(I) Conformal Field Theory in Embedding Space

Wednesday 9 June 2021 12:45 (5 minutes)

We develop the embedding space formalism and determine the full operator product expansion relevant to conformal field theories in arbitrary spacetime dimensions. With the operator product expansion, we then show how to compute generic conformal blocks for correlation functions with any number of quasi-primary operators in arbitrary irreducible representations of the Lorentz group. Concentrating on four quasi-primary operators, we demonstrate how the embedding space formalism can be used to explicitly write down all four-point conformal bootstrap equations. The resulting equations are expressed in terms of generalized four-point scalar conformal blocks, which are somewhat reminiscent of the seed conformal blocks.

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