

Geometry from Quantum Field Theories — “AdS/CFT” by a conformal flow —

Tuesday 5 March 2024 15:30 (1 hour)

We develop a framework for the construction of the bulk theory dual to conformal field theory (CFT) without any assumption by means of a flow equation. Using the special flow equation, called the conformal flow, we show that the conformal transformation for a normalized smeared field exactly becomes a part of the general coordinate transformation, which would be the isometry of anti-de Sitter space (AdS). By this bulk construction, we derive BDHM relation and GKP-Witten relation.

We also determine the geometry of the bulk space by the state-dependent metric, which turns out to be the AdS metric for the vacuum state.

Some applications are also discussed.

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