Recursive construction of the operator product expansion in curved space

Friday 25 September 2020 17:00 (20 minutes)

I present a formula for the coupling-constant derivative of the coefficients of the operator product expansion (Wilson OPE coefficients) in an arbitrary curved space, as the natural extension of the quantum action principle. Expanding the coefficients themselves in powers of the coupling constants, this formula allows to compute them recursively to arbitrary order. As input, only the OPE coefficients in the free theory are needed, which are easily obtained using Wick's theorem. I illustrate the method by computing some examples, and conjecture on how it can be useful in the context of the AdS/CFT correspondence. Based on arXiv:2007.15668 and work in progress.

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