

Pole-skipping of scalar and vector fields in hyperbolic space

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Motivated by the recent connection between pole-skipping phenomena of two point functions and four point out-of-time-order correlators (OTOCs), we study the pole structure of thermal two-point functions in d -dimensional conformal field theories (CFTs) in hyperbolic space. We derive the pole-skipping points of two-point functions of scalar and vector fields by three methods (one field theoretic and two holographic methods) and confirm that they agree. We show that the leading pole-skipping point of two point functions is related with the late time behavior of conformal blocks and shadow conformal blocks in four-point OTOCs.

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