Séminaire commun LPTENS-LPTHE

Thermal CFTs in momentum space

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LPTENS – Bibliotheque Joel Scherk

Résumé

I show some aspects of conformal field theories at finite temperature in momentum space. First I provide a formula for the Fourier transform of a thermal conformal block and study its analytic properties. In particular I show that the Fourier transform vanishes when the conformal dimension and spin are those of a "double twist" operator $\Delta = 2\Delta_\phi + \ell + 2n$. I present a simple example to illustrate this property. Then, by analytically continuing to Lorentzian signature, I show that the spectral density at high spatial momenta has support on the spectrum condition $|\omega| > |k|$. This leads to a series of sum rules.

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