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Type: **Lecture / lecture series**

The navigator function : sailing through the infeasible sea in the conformal bootstrap

jeudi 6 mai 2021 10:00 (1 heure)

Conformal bootstrap is shown to be very useful for studying the 3D Ising, Super-Ising, $O(N)$ models. Can we bootstrap more and more CFTs that are relevant to condensed matter and statistical physics?

In general, for more complicated CFTs, we expect that one has to bootstrap a large system and carve out theory spaces with many unknown parameters. The traditional numerical bootstrap method searches the theory space by repeatedly checking whether points are allowed or excluded. However this is inadequate for many applications.

In this talk, I will discuss a new method that involves a continuous “navigator” function which is negative in the allowed region and positive in the excluded region. With the navigator function, one can very effectively move through the theory space and navigate towards the CFT island. This method outperforms the old method and can do many new things. I will discuss potential applications in statistical physics.

This talk is based on arXiv:2104.09518.

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Classification de thématique: 1. Status of the conformal bootstrap