Department of Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

A thermal Froissart-Gribov formula for CFTs

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The resurgence of the bootstrap program in CFTs in the last decade has mostly focussed on zero temperature correlators. We propose an extension of the so-called analytic bootstrap for thermal correlators. Thermal two-point functions can be OPE expanded into one point functions of operators. For the two point function of scalar operators, we propose a Froissart-Gribov type formula which "inverts" this expansion, i.e. the formula expresses the one-point functions as an integral of the discontinuity of the two-point function along a certain locus. We test our formula in generalized free field theory, the large-N Wilson Fisher theory. More ambitiously, combining information learnt from the inversion formula with the KMS condition, we try to bootstrap the one point functions of the phi^2 and stress tensor operators in the 3D Ising model.