

A dispersion relation for conformal theories

Simon Caron-Huot *

schuot@physics.mcgill.ca

Dispersion relations, often called Kramers-Kronig relations, exploit analyticity to reconstruct the real part of a scattering amplitude from its imaginary (or absorptive part), the latter being often easier to measure and or to compute. I will present a generalization which reconstructs complete four-point correlators in any conformal field theory, starting with only very limited information about their “absorptive” part. Interesting applications range from three-dimensional critical phenomena to the gauge-gravity (AdS/CFT) correspondence.

*Department of Physics, McGill University, Rutherford Physics Building, 3600 Rue University, Montréal, QC H3A 2T8, CANADA