

Physikalisches Kolloquium

Slava Rychkov, CERN & ENS Paris

»Conformal bootstrap — a new way to compute in quantum field theory«

Einführung: K. Melnikov

Most takes on quantum field theory start from microscopics, fundamental degrees of freedom, a Lagrangian. Conformal field theory is an exception—it focuses on the algebra of local operators and avoids any reference to the Lagrangian. This leads to a method for doing practical CFT calculations—the conformal bootstrap. The method is 40 years old, though it seemed limited to $D=1+1$ dimensions where the conformal group is infinite. Recent work shows how to set it up for any D . Applications are rapidly expanding, and the method will become a standard QFT tool next to the RG, the epsilon-expansion, and the $1/N$ expansion. We will highlight the world-record determination of the 3D Ising critical exponents obtained by the conformal bootstrap.

Donnerstag, 15.01.2015, 17:30 Uhr,

KIT, Campus Süd,

Otto-Lehmann-Hörsaal, Physik-Flachbau (Geb. 30.22).

Anschließend Nachsitzung im Gastdozentenhaus „Heinrich Hertz“