## Integrability in Condensed Matter Physics and Quantum Field Theory



Contribution ID: 14

Type: not specified

## Talk: Conformal Bootstrap from Gaudin Integrability

Sunday 5 February 2023 18:20 (55 minutes)

In d>2 dimensions, the bootstrap program for conformal field theory (CFT) explores the constraints on scaling dimensions and OPE coefficients imposed by the crossing symmetry equations of correlation functions. The kinematical constituents of the crossing equations, called conformal blocks, were recently identified as the wave functions of certain many body quantum integrable systems in the moduli space of Gaudin models. In this talk, I will review some recent applications of multipoint conformal block integrability to the bootstrap. By studying asymptotic limits and rational degenerations of the integrable systems, the crossing equations are solved analytically for the CFT data near singular loci. Explicit examples in four- and five-point functions suggest an interesting classification of singularities at higher points.

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