

Anatomy of the Ising Model from Conformal Bootstrap

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The Ising model is the one the simplest and yet non-trivial Conformal Field Theory. For decades it has been a dream to study such an intricate strongly coupled theory non-perturbatively using symmetries and other consistency conditions. This idea, called the conformal bootstrap, saw some successes in two dimensions but it is only in the last ten years that it has been fully realized in three, four, and other dimensions of interest. This renaissance has been possible due to both significant analytical progress in understanding how to set up the bootstrap equations and the development of numerical techniques for finding or constraining their solutions. In this talk we will review the main developments that have led to precise determinations of critical exponents and correlation function coefficients in the Ising model in three dimensions.

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