

Lars Onsager Lecture 2007

presented by

R.B. Laughlin

Stanford University



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Stanford University

Monday, April 16, 2007 at 10:15-11:00 in R1, Realfagbygget

Onsager's Unsolved Problem: Quantum Criticality

The Onsager solution for the Ising model is centrally important in physics because it constitutes the first (and only) proof that phase transitions follow from microscopic law. However, it applies only to the special case in which the quantum eigenstates are known. The far more important case of a zero-temperature phase transition with continuous symmetry breaking still has no exact solution and is still shrouded in superstition. Moreover, the behavior in question is centrally important to cosmology, materials science and possibly biology. I will review the situation in this subject, particularly the unhappy experimental one, and then make a few speculations about what the solution, when it's eventually found, may reveal.

Professor Laughlin received the Nobel Prize in physics in 1998.

Professor Laughlin will in addition present a popular lecture with title

A Different Universe

on Tuesday, April 17, at 12:15-13:00 in R1, Realfagbygget



The Onsager Medal