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The many paths across a phase transition

Thursday, 16 January 2020 17:30 (15 minutes)

We use holography to study the complete set of inhomogenous static solutions of a four-dimensional gauge theory with a first order thermal phase transition. We numerically solve Einstein's equations using both static and dynamical methods, finding perfect agreement between the results. We analyze their thermodynamic properties and study their local stability, finding unstable solutions. For these solutions, we perform the time evolution and determine the endpoint of the dynamical evolution. As the size of the box is increased, we find solutions that tend to a phase separated configuration in which the high and low energy phases coexist at the critical temperature.

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Session Classification: short talk