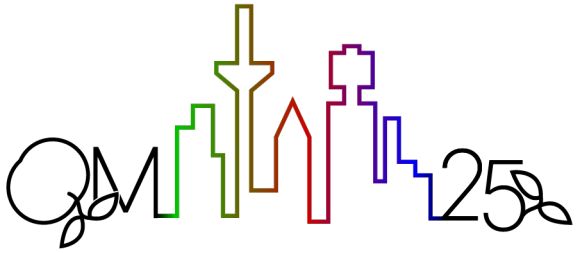

Contribution ID: **1041** Type: **Poster**

Universal non-equilibrium scaling of cumulants across a critical point

We study the critical dynamics of a scalar field theory with Z_2 symmetry in the dynamic universality class of Model A in two and three spatial dimensions with classical-statistical lattice simulations. In particular, we measure the non-equilibrium behavior of the system under a quench protocol in which the symmetry-breaking external field is changed
at a constant rate through the critical point. Using the well-established Kibble-Zurek scaling theory we compute non-equilibrium scaling functions of cumulants of the order parameter up to fourth order. Together with the static critical exponents and the dynamic critical exponent, these fully describe the universal non-equilibrium evolution of the system near the critical point. We further extend the analysis to include finite-size effects and observe good collapse of our data onto two-dimensional universal non-equilibrium and finite-size scaling functions.

Category

Theory

Collaboration (if applicable)

Authors: SIEKE, Leon (Justus-Liebig-Universität Giessen); HARHOFF, Mattis (Universität Bielefeld); Prof. SCHLICHTING, Soeren (Universität Bielefeld); Prof. VON SMEKAL, Lorenz (Justus-Liebig University Giessen)

Presenter: SIEKE, Leon (Justus-Liebig-Universität Giessen)

Session Classification: Poster session 1

Track Classification: QCD phase diagram & critical point