

# Higher order fluctuations form imaginary chemical potential

*Wednesday, July 25, 2018 4:30 PM (20 minutes)*

When comparing lattice calculation to experimental data from heavy ion collision experiments, the higher order fluctuations of conserved charges are important observables. An efficient way to study these fluctuations is to derive them from simulations at a set of imaginary chemical potentials. In this talk we present results for higher order derivatives with respect to  $\mu_B$ ,  $\mu_S$  and  $\mu_Q$  determined at the physical point from simulations with staggered fermions using different imaginary values of  $\mu_B$ . We then can determine several combinations that allow for a comparison to heavy ion collision experiments, and extrapolate these observables to real baryon chemical potential.

**Primary authors:** PASZTOR, Attila (University of Wuppertal); Prof. RATTI, Claudia Ratti (University of Houston); PORTILLO, Israel (University of Houston); GUENTHER, Jana N. (University of Regensburg); SZABÓ, Kalman K. (University of Wuppertal, Jülich Supercomputing Centre); KATZ, Sandor K. (Eötvös University); BORSANYI, Szabolcs (University of Wuppertal); FODOR, Zoltan (University of Wuppertal, Eötvös University, Jülich Supercomputing Centre)

**Presenter:** GUENTHER, Jana N. (University of Regensburg)

**Session Classification:** Nonzero Temperature and Density

**Track Classification:** Nonzero Temperature and Density