

Abstract Submitted  
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**Transits of the QCD Critical Point** DEREK TEANEY, FANGLIDA YAN, Stony Brook University, YI YIN, MIT, YUKINAO AKAMATSU, Osaka University — We analyze the evolution of hydrodynamic fluctuations in a heavy ion collision as the system passes close to the QCD critical point. We introduce two small dimensionless parameters  $\lambda$  and  $\Delta_s$  to characterize the evolution.  $\lambda$  compares the microscopic relaxation time (away from the critical point) to the expansion rate  $\lambda \equiv \tau_0/\tau_Q$ , and  $\Delta_s$  compares the baryon to entropy ratio,  $n/s$ , to its critical value,  $\Delta_s \equiv (n/s - n_c/s_c)/(n_c/s_c)$ . We determine how the evolution of critical hydrodynamic fluctuations depends parametrically on  $\lambda$  and  $\Delta_s$ . Finally, we use this parametric reasoning to estimate the critical fluctuations and correlation length for a heavy ion collision, and to give guidance to the experimental search for the QCD critical point.

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