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Criticality in Trapped Atomic Systems[1] NIKOLAY PROKOFIEV, BORIS SVISTUNOV, Department of Physics, University of Massachusetts, Amherst, LODE POLLET, Theoretische Physik, ETH Zurich — We discuss generic limits posed by the trap in atomic systems on the accurate determination of critical parameters for second-order phase transitions, from which we deduce optimal protocols to extract them. We show that under current experimental conditions the in-situ density profiles are barely suitable for an accurate study of critical points in the strongly correlated regime. Contrary to recent claims, the proper analysis of time-of-fight images yields critical parameters accurately. L. POllet, N. Prokof'ev, and B. Svistunov, Phys. Rev. Lett. 104, 245705 (2010).

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