Full counting statistics with determinantal quantum Monte Carlo STEPHAN HUMENIUK, Institute of Theoretical Physics III, University of Stuttgart — Within the framework of determinantal quantum Monte Carlo a method is presented for computing the probability distribution of the total particle number and magnetization on a subregion of a system of interacting fermions. Such full counting statistics can be obtained from repeated projective measurements in cold atoms experiments with single-site and single-atom resolution. Applied to the attractive Hubbard model, the full counting statistics reveals the size of a preformed pair or Cooper pair as a function of interaction strength.

Stephan Humeniuk
Institute of Theoretical Physics III, University of Stuttgart