



# Probing Dynamics in Ultracold Atoms

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Dynamics in ultracold atoms are often probed through their mean response to external perturbations. In many instances, these dynamics could be well-captured by the evolution of a classical field or fluid model. On the other hand, dynamics revealed in the shot-to-shot fluctuations of ultracold atoms could reveal underlying true quantum behavior. In this tutorial, I will give a few examples on how noise measurement in a system of ultracold atoms could tell us their quantum dynamics, non-classical correlation and quantum entanglement.