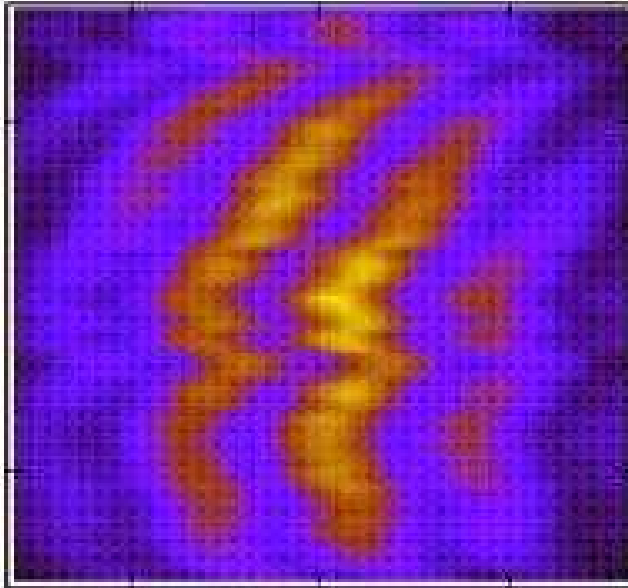


PHYSIKALISCHES KOLLOQUIUM

AM 7. JULI 2014 UM 17 UHR C.T.

IM GROßEN HÖRSAAL



COHERENCE OF MATTER WAVES

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Coherence properties of matter waves can be probed nicely with the help of interference experiments involving ultracold Bose gases. A thorough analysis of these measurements based on spatial and temporal correlations allows to gather detailed information about the underlying many-body quantum state. A stochastic representation of the matter waves successfully reproduces the experimental findings. After a short overview over matter wave interference experiments I focus on equilibrium fluctuations of an interacting ultracold Bose gas and their consequences for matter wave coherence.