

# KIDS TALK

## “Dynamics of Quantum-Systems with Localized Dissipation”

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**Abstract:** In our experiment, we are employing a tightly focussed scanning electron-beam on ultra-cold atoms to locally remove particles. This allows us to probe atomic density distributions with high temporal and spatial resolution. Furthermore, the electron-beam is a versatile tool to manipulate the atomic ensemble e.g. it yields the possibility for localized dissipative defects and therefore to create open quantum-systems. The obtained signal shows the system's reaction on the defect and allows to measure pair-correlations and Zeno-like behaviour. This method can also be used to engineer non-equilibrium states and investigate their time evolution e.g. tunnel dynamics in an one-dimensional optical lattice. In addition, subsequently obtained density-profiles allow for a in-vivo investigation of all the samples.

When: Friday, Jan. 10<sup>th</sup> 2014, **10:00 am**

Where: Room 46-387/388

All undergraduate and graduate students as well as postdocs are welcome and encouraged to join our discussion!

\*\*\*\*\* COFFEE, TEA AND COOKIES WILL BE SERVED \*\*\*\*\*

For subscription to kids mailinglist, questions, comments or suggestions: [grusdt@physik.uni-kl.de](mailto:grusdt@physik.uni-kl.de)

