

Seminar über Quanten-, Atom- und Neutronenphysik (QUANTUM)

June 21, 2018 at 2 p.m. c.t.
Lorentz-Raum (05-127), Staudingerweg 7

Note: Vortrag im Rahmen des SFB/TR 49-Kolloquiums

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Mixing it up with atomic mixtures

Mixtures of ultracold atomic gases are an extremely versatile platform for the investigation of a wide variety of fundamental questions in physics. In this talk, we will first discuss their realization as done in our lab [1]. We will then present their possible application to two rather distinct problems, the quantum simulation of dynamical gauge fields [2] and the implementation of quantum heat engines.

REFERENCES

- [1] T. Rentrop, A. Trautmann, F. A. Olivares, F. Jendrzejewski, A. Komnik, and M. K. Oberthaler, "Observation of the phononic Lamb shift with a synthetic vacuum", Phys. Rev. X 6, 41041 (2016).
- [2] V. Kasper, F. Hebenstreit, F. Jendrzejewski, M. K. Oberthaler, and J. Berges, "Implementing quantum electrodynamics with ultracold atomic systems" New J. Phys. 19, 23030 (2016).