

Tunable two-dimensional arrays of single Rydberg atoms for realizing quantum Ising models

Wed, 2017-04-19 17:37 - [Marc Cheneau](#) [1] **Date:** 2016-06-30

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Reference:

Nature 534, 667-670 (2016)

URL:

<http://www.nature.com/nature/journal/v534/n7609/abs/nature18274.html> [2]

Many proof-of-principle platforms for quantum simulation of spin models such as the Ising model have been implemented. It has proved difficult to produce a design with sufficient flexibility to realize arbitrary geometries and variable distance, however. Here, the authors have developed a platform that achieves this flexibility with large atom numbers. The setup is based on arrays of optical microtraps. Creating spin chains with periodic boundary conditions, the authors study the dynamics of an Ising-like spin system with 30 spins. The platform shows promise for the investigation of new phenomena in spin physics.

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