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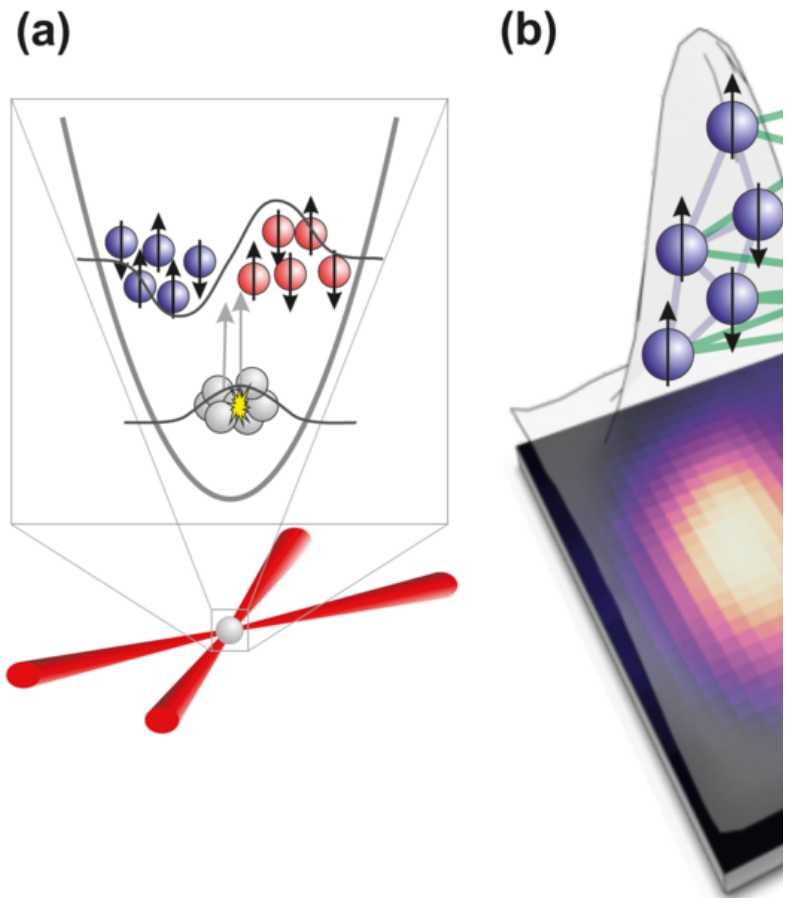
05/22/2018

QUANTUM ENTANGLEMENT BETWEEN THE TWO CLOUDS STARTING FROM A SINGLE B CONDENSATE

Dr. Giuseppe Vitagliano from the Institute for Quantum Information (IQOQI-Vienna) collaborated with the Qua Quantum Metrology group led by Prof. Geza Toth at the Country, on detecting entanglement in Bose-Einsten co



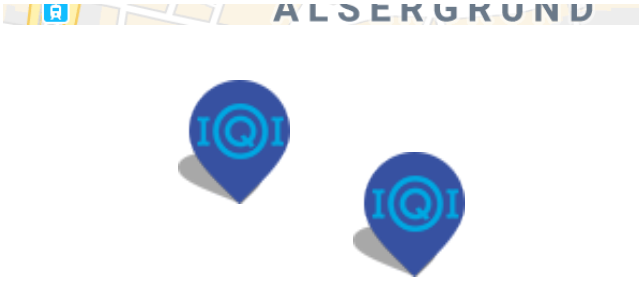
Pictorial representation of the experiment: entanglement is achieved bet single Bose-Einstein condensate. Drawing by: Iagoba Apellaniz, UPV/EH

The scheme has been used in the experiment of Prof. Car
Hannover, where an entangled state between two spatia
condensates has been observed. The results has been rec
416-418 (2018)] (http://science.sciencemag.org/content/

In the experiment, a highly entangled Dicke state was cre
The cloud was placed in a double-well and thus spatially c
Measurements of the collective spin on the two wells sho
thousands of atoms each, are entangled.

The experiment demonstrates that multipartite entangle
particles can be converted into bipartite entanglement of
This is very relevant, since there are numerous experime
states in Bose-Einstein condensates, while for certain ap
technologies the distinguishability of the parties is requir

CONTACT



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