



Kolloquium

Dr. Otfried Guehne

(Institut fuer Quantenoptik und Quanteninformation, Oesterreichische Akademie der Wissenschaften, Innsbruck)

Entanglement characterization in experiments

Due to the rapid development of the experimental techniques multi-particle entangled states of several ions or photons are now generally available. To confirm the success of an experiment, the analysis of the state has to verify that genuine multipartite entanglement was indeed produced. This means that entanglement must be present between all parties, and not only between some of them.

In this talk I will show that special observables, so-called entanglement witnesses, are powerful tools for the analysis of experiments. They can be used for the detection of entanglement as well as for the estimation of entanglement measures. I will discuss two recent experiments where some of these ideas have been implemented: one experiment aimed at the creation of an eight-qubit W state with trapped ions, and in the other experiment six-qubit graph states have been produced using polarized photons.

Wann? Freitag 03.11.2006, 15:30 Uhr

Wo? Universität Ulm, Raum H14/N24