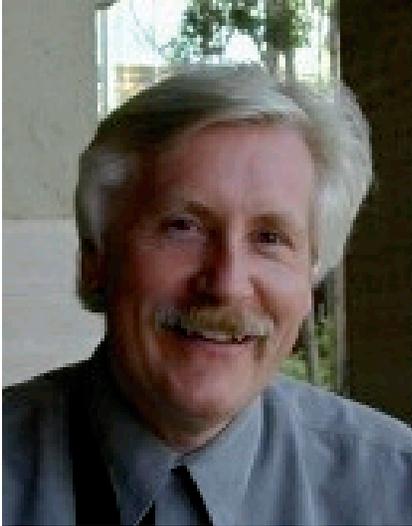


## Quantum-Atom Optics in Australia



### **Hans A. Bachor**

**Director**

**ARC Centre for Quantum-Atom Optics  
Australian National University**

PhD Universität Hannover

This talk reviews work in his center using non-classical optical fields to control matter waves.



**3:45 pm, Wednesday, October 3, 2007**

Bausch and Lomb 106

Refreshments at 3:30 B&L Lobby

**Note special day and location**

Joint Colloquium with the Department of Physics and Astronomy

# Highlights in Quantum-Atom Optics in Australia

**Prof. Hans-A. Bachor**  
**Australian National University**  
**Director of the Australia Research Council Centre of Excellence**  
**for Quantum-Atom Optics**

**Abstract:** The ARC Centre for quantum-atom optics (ACQAO) combines the talent and resources of several teams across Australia. Recently we have made good progress with our experiments and theory in both the generation and use of laser beams with strong nonclassical properties and the control of matter waves, such as atom lasers. This talk will summarize some of the new results. Particular emphasis will be given to experiments on spatial multimode fields which allow novel tests of quantum mechanics as well as technology for spatial sensing and spatial quantum encoding beyond the conventional quantum noise limit.

**Biography:** Prof. Hans-Albert Bachor is the Director of the newly founded Australian Research Council Centre of Excellence for Quantum-Atom Optics at the Australian National University for the study and application of atoms and light at the quantum level. He received his diploma and doctorate in Physics from the University of Hannover, Germany. He was attracted to Australia in 1981 by the Australian National University where he has been teaching Physics at all levels with great enthusiasm and success.

He established a widely known group for experimental optics and explores the possibilities of harnessing the quantum nature of light. He worked and taught many times in the USA, Germany, Denmark and France and has introduced many young scientists to Australia.

He holds many academic awards and distinctions, including the Humboldt Research Prize, Fellow of the Institute of Physics (UK) and is recipient of the Walter Boas medal from the Australian Institute of Physics.