



Chris Wade

(Durham University)

Optical Bistability and Terahertz Sensing with a Rydberg Vapour

Recently our group demonstrated intrinsic optical bistability in a room temperature Caesium vapour cell [1]. The bistability is accompanied by a nonequilibrium phase transition between states of low and high Rydberg occupancy [2]. We have found that it is possible to cross the phase transition by driving resonant terahertz frequency transitions between neighbouring Rydberg states. In this 'terahertz detector' configuration the phase transition enhances the response of the system to the terahertz radiation. I will begin the talk by introducing the optical bistability effect, and move on to discuss terahertz sensing.

[1] C. Carr et. al., Phys. Rev. Lett., 111, 113901 (2013)

[2] M. Marcuzzi et. al., Phys. Rev. Lett., 113, 210401 (2014)

26. Juni 2015, 9:45 Uhr

Universität Stuttgart, NWZII, Raum 3.123
Pfaffenwaldring 57, 70569 Stuttgart

