



# Münchner Physik- Kolloquium

Winter  
2017/18

## Integrated optomechanics and linear optics quantum circuits

Prof. Dr. Menno Poot, *Physik-Department, Technische Universität München*

Monday, 11 December 2017, 17:15 h

Hörsaal H 030, Fakultät für Physik der LMU, Schellingstraße 4, München

Integrated optics provides unprecedented flexibility, scaling possibilities, and stability of optical circuits. In this talk, I will address two topics in this rapidly developing field. By combining movable structures with electrostatic actuation, we developed an opto-electromechanical platform that can be employed as a broadband integrated phase shifter. In vacuum, quality factors up to 300 000 are observed in these devices, which provides an excellent test ground for optomechanical experiments directed towards the quantum regime.. Their motion can be resolved with femtometer resolution, and parametric squeezing is used to reduce the thermal motion. However, when increasing the pump strength, instabilities occur that limit the amount of squeezing that can be realized. By parametrically pumping in the presence of a real-time stabilization of the unstable quadrature, 15 dB of thermo-mechanical noise squeezing

## Student event: Meet the speaker

We invite you to a **student-only** discussion-round with Prof. Dr. Menno Poot before his Munich Physics Colloquium talk.

*Be curious and feel free to ask any question.*

Monday, 11 December 2017, 16:00 h

Room H 522 (5th floor), Fakultät für Physik der LMU, Schellingstraße 4, München

