



# Münchner Physik- Kolloquium

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2017

## Nonlinear response of glass-forming fluids: Probing structural rearrangements by strong external fields

**Prof. Matthias Fuchs**, *Fachbereich Physik, Universität Konstanz*

Monday, 24 July 2017, 17:15 h

Hörsaal 2, Physik-Department der TUM, Garching

The fundamental understanding of the glass transition constitutes one of the open challenges in Statistical Physics and Materials Science. It addresses slow processes in disordered systems where the mechanisms of particle rearrangements and transport are highly cooperative. External fields have strong effects, as the time scales of external drive and intrinsic structural rearrangements can easily be made to match. I review recent insights into the microscopic transport mechanisms in glass-forming systems obtained by nonlinear mechanical and electric spectroscopy, by confinement and by probe particle studies, forcing probe particles to move in amorphous environments. Generalizations of the mode coupling theory developed for quiescent liquids capture how the local arrested structures are affected by the external fields and provide a framework for the nonlinear response rationalizing many phenomena.

## Student event: Meet the speaker

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

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

Monday, 24 July 2017, 16:00 h

Seminar room PH 3076 (upper floor), Physik-Department der TUM, Garching

