



› Allgemeines Physikalisches Kolloquium

› Donnerstag, 18.05.2017 um 16 Uhr c.t.

Prof. Dr. Ralf Stannarius

Universität Magdeburg



Experiments with freely suspended and freely floating liquid films

Smectic liquid crystals, owing to their internal molecular layer order, allow the preparation of stable, free-standing films, similar to soap films. Unique experiments on the mobility of objects in a quasi-two-dimensional (2D) fluid, on interactions and self-organisation of quasi-2D emulsions, on the shape dynamics of closed membranes, and on the rupture dynamics of thin fluid films can be performed.

In addition to traditional polarizing microscopy investigations under normal gravity, experiments under zero gravity on parabolic flights, suborbital rockets, and the International Space Station ISS are presented.

The images show freely floating smectic liquid-crystalline bubbles recorded with a highspeed camera. The object sizes are in the range of about 1 cm, film thicknesses are in the range between a few dozen nanometers to few micrometers.

