

Physikalisches Kolloquium

Martin van Hecke, Universität Leiden und AMOLF Institut Amsterdam

»Mechanical metamaterials: step by step«

Einführung: M. Wegener

Ordered sequences of motions govern the morphological transitions of a wide variety of natural and man-made systems, while the ability to interpret time-ordered signals underlies future smart materials that can be (re)programmed and process information. Mechanical metamaterials form an ideal platform to create - and study - such smart materials.

After reviewing of the basic elastic instabilities which power metamaterials, I will discuss metamaterials with sequential - step by step - behavior. These include self-folding materials, metamaterials that count, and non-Abelian metamaterials that are sensitive to sequential input. I then connect these behaviors to the complex response of more general frustrated materials, and sketch a unified framework that connects the response of complex materials - from crumpled sheets to metamaterials - to the calculations performed by finite state machines.

**Freitag, 21.05.2021, 16:00 Uhr,
live über Zoom.**