



Beitrag ID: 2

Typ: Talk

## News from adaptive transport through coupled flow paths

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In our project within the framework of SPP 2171, we are studying and analyzing the transport of fluids and bubbles/droplets in channels interfaced by flexible membranes in microfluidic environments. Our designed microfluidic setup allows for a defined flow-control within the microchannels as well as for the opportunity to analyze fluid transport within the channels and cross-correlations between the channels linked by the elastic membranes. Moreover, initiating and modifying instabilities of the membranes and the feedback in the transport channels, the coupling and cross-communication of the flowing materials and information transport can be amplified and specifically shaped. This membrane-initiated crosstalk will be used to move, adapt, govern, shift and stop specific flows and bubble/droplet motions within fluid transport routes and furthermore to introduce flow patterns with adaption and self-regulation capabilities as well as on the long term logical links and operations within fluid transport networks

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**Sitzung Einordnung:** Short talks