



## PHYSICS COLLOQUIUM

*Speaker:* **Prof. Elisabeth Fischer-Friedrich**  
Excellence Cluster Physics of Life  
Technische Universität Dresden



*Topic:* **How cellular surface tension brings cells and tissues into shape**  
*Inaugural lecture*

*Time and place:* Tuesday, November 7, 2023, **2:50 pm** – hybrid event  
**The colloquium will be held in REC/C213.**  
Online participation possible:  
Zoom-Meeting: Meeting-ID: 631 3817 8900 / passcode: PC-WiSe23  
<https://tu-dresden.zoom-x.de/j/63138178900?pwd=am9nSzYyeUh3SWxMdnNBWkpUaXI5UT09>

*Host:* Dean Prof. Carsten Timm

*Abstract:* Just like liquid droplets, cells exhibit a surface tension. In droplets, surface tension stems from interfacial tension associated to the boundary of different phases. However, cellular surface tension corresponds to a mechanical tension in a thin layer of a biopolymer network at the outermost surface of cells. The tension in this network is generated by active processes and is based on the non-equilibrium nature of this living system. I will explain concepts and data of how cells generate this active surface tension. Furthermore, I will give examples of how cells use this actively regulated surface tension in biological processes such as cell division and tissue morphogenesis.

*Bio:* As of 2023: Center for Systems Biology Dresden (CSBD) Affiliate / as of 2023: Heisenberg Chair (tenure track) at the Cluster of Excellence Physics of Life, TU Dresden / since 2019: Group leader at the Cluster of Excellence Physics of Life, TU Dresden / 2017–2019: Group leader at Biotec, TU Dresden, "Active rheology of the actin cytoskeleton" / 2011–2016: Postdoctoral work jointly at the Max Planck Institute of Molecular Cell Biology and Genetics, Dresden and the Max Planck Institute for the Physics of Complex Systems, Dresden / 2009–2011: Postdoctoral work at the Weizmann Institute of Sciences, Israel.

