Physikalisch-Chemisches Kolloquium am Donnerstag, den 14.01.2016 um 10:15 (AR-F002)

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Titel: *Life-Science Applications of the 2nd-Generation QCM*

Abstract:

The quartz-crystal microbalance (QCM) today can do much more than weighing thin films. It is a surface-analytical tool, which is simple, on the one hand, and applicable to a wide array of samples and problems, on the other. Of crucial importance to this development were of novel sensing dimensions inherent to the QCM. These include amplitude modulation, temperature modulation, and electrical stimulation. Equally important is a coherent frame of modeling, which rests on the small-load application. On a fundamental level, the QCM determines the area-averaged stress at the resonator surface. The challenge is to relate this stress to the properties of interest.

The QCM looks back to an exciting history, where it has been applied to ever new samples and ever new problems.

Some of these will be discussed, where an emphasis is on the life sciences and biophysics. The examples include the measurement of contact stiffness, the determination of partial slip, and studies on supported lipid bilayers based on temperature sweeps.