

PHYSIKALISCHES KOLLOQUIUM

SOMMERSEMESTER 2024

Montag, 06.05.2024, 12 Uhr c.t.

QUANTUM NANOFUIDICS: FROM QUANTUM FRICTION TO HYDROELECTRIC POWER

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Liquids are usually described within classical physics, whereas solids require the tools of quantum mechanics. We have shown that in nanoscale channels, this distinction no longer holds. At these scales, the liquid flows become intertwined with electron dynamics in the channel walls, resulting in a wealth of phenomena beyond the reach classical fluid mechanics [1]. I will discuss, in particular, our recent results on the coupling of liquid flows with electric currents in the channel walls [2], and implications for hydroelectric energy conversion at the nanoscale.

[1] N. Kavokine, M.-L. Bocquet and L. Bocquet, *Nature* 602, 84–90 (2022).

[2] B. Coquinot, L. Bocquet and N. Kavokine, *Phys. Rev. X* 13, 011019 (2023).

Die Einführung erfolgt durch Marialore Sulpizi

Die Fakultät lädt alle Interessierten herzlich ein. Die Veranstaltung findet im Hörsaal HNB statt.

