

Electrodynamics of water under extreme confinement within clays

Friday 15 November 2024 09:20 (20 minutes)

I will discuss the experimental electrostatics, electrical conductivity, and dielectric properties of water confined between clay nanocrystals within nanometer-scale slit channels. I will highlight how ionic and molecular transport are influenced by clay type, humidity, pressure, and electrolyte concentration. These findings have significant implications for natural phenomena such as electrification, lightning, soil swelling, and freezing. Finally, I will demonstrate how these insights can be applied to develop efficient, low-cost electricity storage solutions.

Significance

Presenter: ARTEMOV, Vasily (EPFL - EPF Lausanne)

Session Classification: Liquids and liquid interfaces