

Functionalities of Ferroic Materials: from Mathematics to 3D APT

Thursday 5 June 2025 10:45 (1h 15m)

The talk will introduce the FerrMion project, the main aim of which is to develop tools for transferring unique functional behaviours of ferroic solids onto engineering and application levels. The project encompasses a broad range of scientific disciplines, ranging from the calculus of variation to additive manufacturing. A big emphasize in the project is put on bridging between various spatial and temporal scales, both in experiments and in theory. The finest spatial scale in ferroics is the atomistic one, treated theoretically by first-principles and molecular dynamics simulations; obtaining relevant experimental data for such purposes requires an imaging technique with a comparable resolution. For this reason, the project has an ambition to build and operate a 3D atom probe tomography (3D APT) facility in Prague, the first of its kind in the former Central and Eastern Europe.

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