

Lecture "Machine-learning aided atom probe tomography: status and (possible) directions"

Tuesday, 14 September 2021 15:00 (1 hour)

Atom probe tomography (APT) is a materials analysis technique that provides sub-nanometer resolution compositional mapping. The data is in the form of a point cloud containing often millions of atoms, and to each of these points is associated an elemental nature. By interrogating the point cloud, the local composition of a material or a phase of a specific microstructural feature can be reported. APT is often referred to as "data-intensive" technique, and has long made use of many clustering-type techniques (DBSCAN, NN etc.) to facilitate data extraction, which are all now often classified as belonging to machine-learning.

In this presentation, I will review some of the recent developments from MPIE in the application of machine-learning techniques to atom probe analysis workflows –i.e. beyond just extraction of data from the point cloud –targeting faster and more efficient, reliable and reproducible data analysis.

Primary authors: SAXENA, Alaukik (Max-Planck-Institut für Eisenforschung GmbH); GAULT, Baptiste (Max-Planck-Institut für Eisenforschung GmbH); FREYSOLDT, Christoph (Max-Planck-Institut für Eisenforschung GmbH); WEI, Ye (Max-Planck-Institut für Eisenforschung GmbH); LI, Yue (Max-Planck-Institut für Eisenforschung GmbH)

Presenter: GAULT, Baptiste (Max-Planck-Institut für Eisenforschung GmbH)

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