

In Brief: Unmasking elusive hydrogen

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Researchers used the SEQUOIA inelastic spectrometer at the Spallation Neutron Source to map the dynamics of hydrogen atoms in a natural crystal of muscovite.

The team from the Czech and Slovak Republics compared their experimental findings with [computer simulations](#) of the material's structure and dynamics to check the accuracy of the theoretical predictions.

The research represents the state of the art in combining computational and neutron scattering studies of a material.

SEQUOIA was able to measure hydrogen dynamics in the low-energy ranges of the material that previously have been inaccessible because the motions of heavier atoms mask the motions of hydrogen in that region.

Hydrogen dynamics in different types of micas are what distinguish one from another, and this research provides preliminary data for further studies of less well ordered but technologically more important sheet silicates.

Provided by Oak Ridge National Laboratory

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