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Quasi-Elastic Neutron Scattering Study of Characteristic Features of Water Dynamics in Confined Geometries SOULEYMANE DIALLO, Oak Ridge National Laboratory Oak Ridge, TN, USA, NARESH OSTI, Oak Ridge National Laboratory, Oak Ridge, TN, USA, ALEXANDRA COTE, University of Miami, FL, USA, EUGENE MAMONTOV, ANIBAL RAMIREZ-CUESTA, DAVID WESOLOWSKI, Oak Ridge National Laboratory, Oak Ridge, TN, USA — Water trapped in restricted environments is ubiquitous in nature and known to influence many biochemical and geophysical processes. Understanding the structural and dynamical properties of nano-confined water (very different than those of the bulk phase) is thus of key fundamental interests. We present a survey of various quasi-elastic neutron (QENS) studies of nano-confined water, which we further analyzed in the context of a proposed universal scaling law. Using this predictive law, we specifically investigate how the diffusive behavior of water changes with changing hydration level, confinement size, or geometry. Finally, we present our recent QENS results of water in nanoporous media evaluated using this scaling law.

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