

Diffusion in liquids: Quasielastic neutron scattering on water using neutron time-of-flight spectroscopy on TOFTOF

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Applications of neutron time-of-flight spectroscopy (TOF) are diverse and numerous. They include investigations of vibrational and magnetic excitation by inelastic scattering (INS), intermolecular potentials by tunnelling spectroscopy and translational and reorientational dynamics by quasielastic neutron scattering (QENS). Within this practical we will focus on QENS. This experiment aims to study the diffusion of water (H_2O). The dynamics will be studied around room temperature. Different diffusion models, such as the Fick model, will interpret the experimental data.

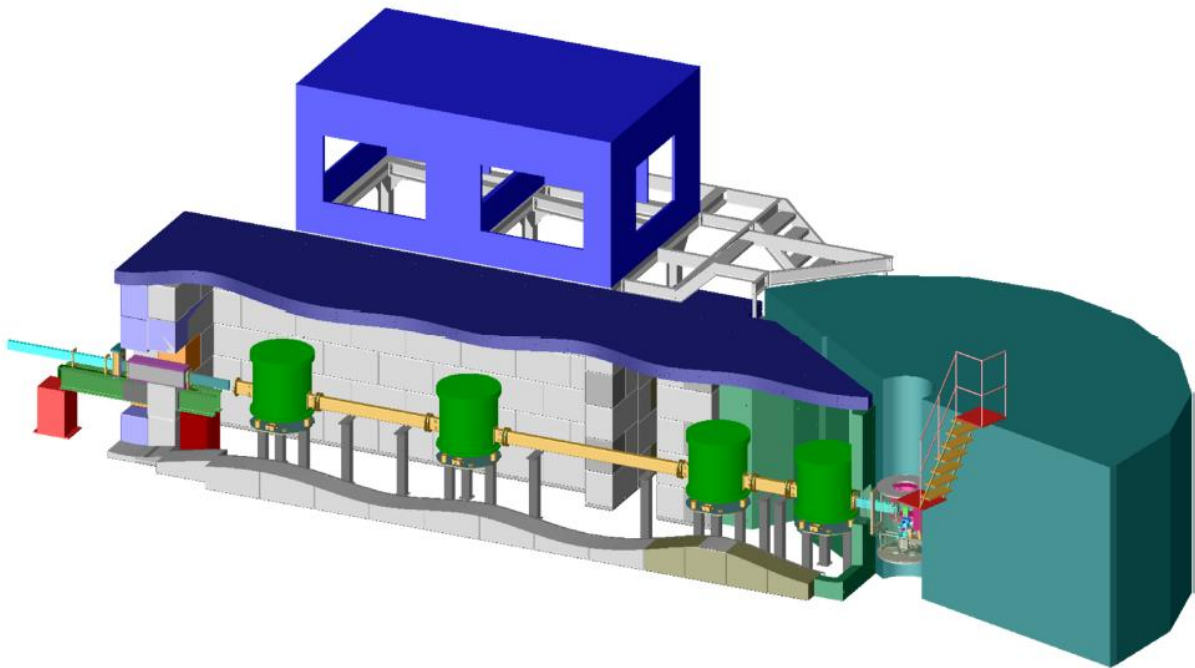


Abbildung 1: Drawing from TOFTOF showing the chopper vessels, sample area and the detector tank