

# The cold chopper spectrometer TOFTOF and its application to Biology

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TOFTOF is a cold direct geometry chopper spectrometer at the Heinz Maier-Leibnitz Zentrum (MLZ) in Garching, operated by the Technische Universität München. The instrument is dedicated to measure quasielastic scattering and low lying excitations. The large dynamical range and an energy resolution that can be freely tuned between 3 meV and 2  $\mu$ eV makes TOFTOF ideally suited to probe the dynamics in biological and soft matter materials in the range of picoseconds, complementary to the time scales measured by backscattering or neutron spin echo instruments. Recent developments of the instrument such as the focusing guide to study small samples will be presented, moreover the possibilities of TOFTOF to address questions in biological and soft matter materials will be discussed. Examples include, among others, the investigation of lipid membranes relevant to Alzheimers disease [1] or the study of photoactive protein solutions [2].

**Primary author:** LOHSTROH, Wiebke

**Co-author:** EVENSON, Zachary

**Presenter:** LOHSTROH, Wiebke

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