

## Thermal neutron three-axes spectrometer PUMA



Phonon – collective motion of periodically arranged nuclei – is one of the most common elementary excitations in a solid. This collective excitation of lattice is mainly responsible for characteristic behavior of thermal conductivity, electrical resistance, or superconductivity. Thus, studying a phonon dispersion is quite essential to understand many of physical phenomena in condensed matters. PUMA as a thermal neutron three-axes spectrometer is designated to measure inelastically scattered neutrons off from a sample, enabling us to trace a phonon dispersion relation. Using a standard sample on PUMA, we will establish one of acoustic phonon branches by measuring lattice vibrations at many different momentum positions.

