Contribution ID: **218** Type: **Poster**

PANDA - the cold neutron TAS at MLZ

Wednesday 9 December 2020 17:40 (20 minutes)

The cold three axes spectrometer PANDA offers high neutron flux, high resolution in momentum (Q) and energy (E) combined with low instrumental background. The instrument allows the investigation of systems where small sample sizes are available, or samples with weak scattering cross sections. Specialized sample environment is available for experiments under extreme conditions, such as milli-Kelvin temperatures and magnetic fields up to 12 T. Furthermore, high temperatures up to 2100 K and high pressures are possible. The instrument is perfectly suited for the investigations of magnetism and superconductivity on single crystals at low energy range. Typical experiments include quantum magnetism, heavy-fermion or low-dimensional systems, frustrated and multiferroic materials, investigation of magnetic excitations, lattice dynamics and their hybridization. The actual scientific goals are often connected with discovering exotic spin states under extreme conditions and make the PANDA an excellent tool to solve the pressing questions in modern condensed matter physics.

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Session Classification: Joint poster session of MLZ User Meeting and DN2020

Track Classification: DN: Instrumentation