

## The new ultracold neutron source at the Paul Scherrer Institute.

*Wednesday, 20 June 2012 17:20 (20 minutes)*

on behalf of the UCN Project Team

August 2011 marked the official startup of regular beam operation of the ultracold neutron (UCN) source at the Paul Scherrer Institute, Switzerland. The design goal is to exceed the currently available UCN densities by a factor 50 to 100 and to use these neutrons for fundamental physics experiments, most prominently the search for a neutron electric dipole moment (nEDM), the precise determination of the lifetime of the free neutron or the precision determination of neutron decay parameters, amongst others.

The main components of the complex apparatus will be introduced and the principles of operation explained. The experience of the first months of operation together with first neutron measurements characterizing the source performance during startup will be presented.

**Primary author:** Dr LAUSS, Bernhard (Paul Scherrer Institute)

**Presenter:** Dr LAUSS, Bernhard (Paul Scherrer Institute)

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