

# Atomic magnetometry in precision experiments for the nEDM collaboration

**G. Bison<sup>1</sup>**

*<sup>1</sup>Paul Scherrer Institute, Villigen, Switzerland*

Many precision experiments use precessing spins as sensitive probes to various aspects of nature. Typically, those experiments observe the precession frequency of electronic or nuclear spin systems and search for weak correlations of those frequencies with the physical effect under investigation. This principle will be illustrated using the example of the neutron EDM experiment at PSI. Because of the strong coupling of the precession frequency to the magnetic field, it is of critical importance to isolate such experiments from magnetic field disturbances. At PSI we will use a combination of active and passive magnetic shielding as well as more than 100 auxiliary magnetometers to control and monitor the magnetic field in the experiment. The performance of this system will be reviewed and potential applications of similar systems for magnetometer tests and bio-magnetometry will be discussed.