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Status of ^{3}He-Magnetometry

Tuesday, 12 October 2010 17:00 (2 hours)

For the measurement of the electric dipole moment of the free neutron it is important to know the exact magnetic field inside the EDM spectrometer. This field can be measured in-situ by monitoring the spin-precession of polarized ^{3}He.
At the institute of physics of the university of mainz a compact polarizer unit for ^{3}He is under construction. The ^{3}He will be polarized, compressed and filled in two magnetometer vessels inside the EDM chamber.
The poster shows the actual status of the polarizer developments in mainz and also first results a test setup installed at the OILL in November 2009 where the ^{3}He spin precession was measured for first time with laser pumped cesium magnetometers from FRAP inside an EDM shield.
It will be also demonstrated, that the vertical net magnetization and the Bloch-Siegert Shift of the ^{3}He magnetization don't have any big influence on the UCNs.

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