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Application of a He-3 magnetometer: Search for Lorentz- and CPT violation

abstract: In Mainz, a Helium-3 magnetometer which can detect tiny magnetic field fluctuations in the order of fT is being developed. This fulfills the needs for its use in a future EDM search. A modified version of the magnetometer can be used as a clock, since the decay time of the free precession of the He-3 can be made as long as days. In the poster, we describe an experiment to search for variations of the clock speed with the orientation of the clock in the universe, an effect which is predicted from Standard Model extensions incorporating Lorentz- and CPT violation.