

## Manifestation of dark matter axions in spin experiments

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A. J. Silenko

BLTP JINR, Dubna, Russia

The relativistic spin dynamics defined by the pseudoscalar field of dark matter axions is rigorously determined [1]. The relativistic Hamiltonian in the Foldy–Wouthuysen representation is derived. The biggest term describes the extraordinary (three orders of magnitude) enhancement of the axion wind effect in storage ring experiments as compared with experiments with immobile particles. This term defines the spin rotation about the longitudinal axis. The effects caused by the axion-induced oscillating EDM and the axion wind consist in the spin rotations about the different horizontal axes and phases of stimulating oscillations differ by  $\pi/2$ . The EDM effect for electrons is considered.

[1] A. J. Silenko, Relativistic spin dynamics conditioned by dark matter axions, Eur. Phys. J. C 82, 856 (2022).

**Primary author:** Prof. SILENKO, Alexander (Joint Institute for Nuclear Research)

**Presenter:** Prof. SILENKO, Alexander (Joint Institute for Nuclear Research)

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