P5783: P, T-ODD FARADAY EFFECT: A NEW APPROACH TO IMPROVE THE SENSITIVITY OF THE SEARCH FOR TIME-REFLECTION-NONINVARIANT INTERACTIONS IN NATURE

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- Investigation of the discrete symmetry violations at low energies is an effective tool for developing various models of fundamental interactions
- Due to a large gap between the current experimental bound and the maximum theoretical prediction within the standard model, alternative methods for the observation of the P, T-odd effects are of interest
- We propose and investigate another method for the studying of these effects – the P, T-odd Faraday effect with molecular beams in high-finesse cavity
- Theoretical simulation of the proposed experiment shows that for the PbF and ThO molecules, the current sensitivity can be improved by several orders of magnitude.
- *[D. Chubukov, L. Skripnikov, A. Petrov, V. Kutuzov, and L. Labzowsky, Phys. Rev. A **103**, 042802 (2021)]*