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### Searching for Dunkle Materie with atomic magnetometers and nuclear magnetic resonance

Recently, attention has been drawn to the possibility of searching for ultralight (particle mass  $10^{-12} - 10^{-6}$  eV) fields that could be a significant component of Dark Matter. In this talk, I will describe two such international-collaboration experiments we are working on at Mainz: the Cosmic Axion Spin Precession Experiment (CASPER) [1] and the Global Network of Optical Magnetometers for Exotic physics searches (GNOME) [2,3]. These searches are intrinsically related to the other fundamental-physics quests, including the multipronged attempts to understand matter-antimatter asymmetry of the Universe.

[1] D. Budker, Peter W. Graham, M. Ledbetter, S. Rajendran, and Alex Sushkov, PRX (2014); arXiv:1306.6089 [2] M. Pospelov, S. Pustelny, M. P. Ledbetter, D. F. Jackson Kimball, W. Gawlik, and D. Budker, Phys. Rev. Lett. 110, 021803 (2013); arXiv:1205.6260 [3] S. Pustelny, D. F. Jackson Kimball, C. Pankow, M. P. Ledbetter, P. Włodarczyk, P. Wcisło, M. Pospelov, J. Smith, J. Read, W. Gawlik, and D. Budker, Annalen der Physik (2013); arXiv:1303.5524

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