

# Proposal to detect axionic dark matter via their coherent interaction with intrinsic spin

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We present the research and development program that is underway at National Laboratories of Legnaro and University of Padova which aims to search for axionic dark matter in the range around 100 micro eV. The work is currently funded by INFN. We are investigating the possibility of exploiting the interaction of dark matter axions with the polarized spins in ferromagnetic or paramagnetic resonant systems. We briefly discuss the theoretical basis of this approach, the expected signal to noise ratio and the potential for detection of such a scheme. We hope to be able to present our preliminary experimental work at the time of the conference.

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