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Enhancing the sensitivity of Axion Dark Matter search using Dynamic Nuclear Polarization

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Cosmic Axion Spin Precession Experiment (CASPER) is a laboratory scale experiment looking for axion dark matter, using nuclear magnetic resonance (NMR) techniques. Dynamic nuclear polarization (DNP) can be used to improve experimental sensitivity. I will present first results from electron paramagnetic resonance experiments on transient light-induced paramagnetic centers in ferroelectric material PMN-PT, and outline the prospects for implementing DNP in our axion dark matter search.

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