

Abstract Submitted  
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**A method for wide-bandwidth spin noise measurements without a large background**<sup>1</sup> BRENNAN C. PURSLEY, XINLIN SONG, Applied Physics Program, University of Michigan, Ann Arbor, MI, USA, VANESSA SIH, Department of Physics, University of Michigan, Ann Arbor, MI, USA — Spin noise measurements have rapidly evolved over the last few decades to become a class of highly sensitive characterization tools [1,2]. Presently used methods, though quite sensitive, suffer from large backgrounds. We report on an experiment that yields signal proportional to the spin noise, without further processing. Our demonstration utilizes ultrafast optical techniques, but the signal processing could also be applied to pulsed electrical measurements. We will discuss the experiment, necessary equipment, and data sets from a GaAs sample.

[1] V. S. Zapasskii, *Adv. Opt. Photonics* 5, 131 (2013).

[2] J. Hübner, F. Berski, R. Dahbashi, and M. Oestreich, *Phys. Status Solidi* 251, 1824 (2014).

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