Abstract Submitted
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The Global Network of Optical Magnetometers to search for Exotic physics (GNOME)[1] DEREK JACKSON KIMBALL, California State University - East Bay, SZYMON PUSTELNY, Jagiellonian University, MAXIM POSPELOV, University of Victoria and the Perimeter Institute for Theoretical Physics, MICAH LEDBETTER, AOSense, Inc., NATHAN LEEFER, University of California at Berkeley, PRZEMYSLAW WLODARCZYK, AGH University of Science and Technology, PIOTR WCISLO, Jagiellonian University and Nicolaus Copernicus University, WOJCIECH GAWLIK, Jagiellonian University, JOSHUA SMITH, JOCELYN READ, California State University - Fullerton, CHRIS PANKOW, University of Wisconsin - Milwaukee, DMITRY BUDKER, University of California at Berkeley and Helmholtz Institute Mainz, GNOME COLLABORATION — Construction of a network of geographically separated, time-synchronized ultrasensitive atomic comagnetometers to search for correlated transient signals heralding new physics is underway [S. Pustelny et al., Annalen der Physik 525(8-9), 659-670 (2013)]. The **G**lobal **N**etwork of **O**ptical **M**agnetometers to search for **E**xotic physics (GNOME) would be sensitive to nuclear and electron spin couplings to various exotic fields generated by astrophysical sources. To date, no such search has ever been carried out, making the GNOME a novel experimental window on new physics. A specific example of new physics detectable with the GNOME, presently unconstrained by astrophysical observations and laboratory experiments, is a network of domain walls of light pseudoscalar fields [M. Pospelov et al., Phys. Rev. Lett. 110, 021803 (2013)].

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Derek Kimball
California State University - East Bay

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