

Abstract Submitted  
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**Search for very light neutral spin-zero bosons at optical frequencies.**<sup>1</sup> KENNETH W. MCFARLANE, ANDREI V. AFANASEV, ROOPCHAN R. RAMDON, Hampton University, KEVIN BEARD, GEORGE H. BIALLAS, JAMES R. BOYCE, MICHELLE D. SHINN, Jefferson Lab, OLIVER K. BAKER, MINARNI MINARNI, Yale University — A Hampton-Jefferson Lab-Yale collaboration is working on an experiment (LIPSS) to test one interpretation of the PVLAS experiment. The PVLAS experiment detected a rotation of the plane of polarization of light in a magnetic field in a vacuum. This can be interpreted as due to the production of a very light (meV) neutral boson that couples to two photons. Such a boson would be outside the Standard Model. The LIPSS experiment is looking for the two-step process in which bosons are generated in a magnetic field by a laser beam and then photons are regenerated by the bosons in a second magnetic field. The status of the experiment, being carried out at the Jefferson Lab Free-Electron Laser User Facility, will be reported.

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