

Abstract Submitted
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The Any Light Particle Search II (ALPS II) experiment¹

GIUSEPPE MESSINEO, Univ of Florida - Gainesville, ALPS II COLLABORATION COLLABORATION — The ALPS II experiment searches for weakly interacting, low mass particles such as axion-like particles (ALPs) using the light shining through a wall technique. A laser beam is sent through a high magnetic field region where, due to a process known as reverse Primakoff or Sikivie effect, photons can convert into ALPs. An optical barrier is set at the end of this region to prevent photons from reaching a second magnetic region where ALPs reconvert back to photons and are detected as light shining through a wall. To increase the number of available photons experiments usually set up high finesse optical cavities in the first magnetic region. ALPS II will take a step further and use a resonant regeneration scheme in which a second optical cavity, mode-matched and resonant with the first one, will be set up to enhance the back conversion probability of ALPs into photons. The collaboration is currently building the ALPS IIa experiment at DESY in Hamburg, Germany to test and validate the resonant regeneration concept, in preparation for a large scale experiment (ALPS IIc) that will use two 100m long cavities and 20 straightened HERA superconducting dipole magnets. I will give a general overview of the experiment and report on its current status.

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