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Status of the first ALPS II science run

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The Any Light Particle Search II, ALPS II, is a Light Shining through a Wall experiment at DESY in Hamburg, hunting for axions and axion-like particles in the sub-meV mass range with an axion-photon coupling gαγγ > $2 \times 10-11$ GeV-1, improving sensitivity by a factor of 103 compared to its predecessors. A high-power laser is directed through a long array of superconducting dipole magnets and an optical cavity, where some photons may convert into a beam of axion-like particles, exploiting the inverse-Sikivie effect. The axion beam will then pass through a light-tight barrier and enter another strong magnetic field in a second cavity, mode-matched to the cavity before the wall, where some of the axion particles can convert back into photons and be detected. The ALPS II experiment has begun the initial data acquisition phase without the cavity before the wall to optimize stray-light hunting. At this stage, the heterodyne detector (HET) scheme is implemented for the detection of regenerated photons. To confirm the results obtained with the HET, independent measurements might subsequently be conducted with the superconducting Transition Edge Sensors (TES). In this talk, we will describe the status and experience of the initial data taking with ALPS II.

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