

Title: Lasers for the axion-like particle search

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Abstract

A couple of promising experiments on the axion-like particle search (ALPS) are currently ongoing, reaching a level of high interest in the field of light particle research. In all kind of these experiments lasers are used to directly produce ALP or to detect effects like polarization changes. For the direct production the number of produced ALP scales with the number of photons interacting with a strong magnetic field. Therefore, high power laser systems are needed to produce a detectable number of ALP. Laser parameters like wavelength, beam quality and operation regimes (cw or pulsed) directly effect the experiments sensitivity. The design considerations for different laser systems as well as some usable laser systems for the ALPS will be shown.