

Probing a new WISP model with laboratory experiments

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Existing experiments looking for Axion (like-particles) and Hidden Photons are in the stage of major updates, and many other new proposals are also foreseen to start in the near future. The sensitivity will increase significantly and therefore, seems timely to put under the microscope more complex models than the usual one new particle picture (ALP-photon or HP-Photon). We work on a model with a coupling between HP and ALP and a kinetic mixing between HP and photons. This model was firstly introduced to naturally accommodate the puzzling observation of a 3.55 keV line seen in several cluster of galaxies. We obtain oscillation probabilities between the three particles in vacuum and analyse the sensitivity to the model of optical precision experiments such as LSW and vacuum polarisation.

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