

Searching for new bosons in atomic spectra

Monday 5 December 2022 15:00 (20 minutes)

We shall explain why we expect atomic spectra to be sensitive to new bosons, like Z' boson and axion. Such bosons can be exchanged between the known particles. We will present new bounds on the properties of such bosons, using spectra of antiprotonic helium, muonium, positronium, helium, and hydrogen. We will show how to construct such bounds, including one using pseudovector interaction which is inversely proportional to the boson's mass squared.

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Combining results from different experiments, we compare bounds on spin-dependent interactions from a review in the making.

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