

Isotope shift spectroscopy to search for New Physics

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The search for "new" particles is dominated by the quest for dark matter candidates, but there are also strong motivations to search for yet undiscovered particles not related to dark matter. In particular, we are searching for a hypothetical New Boson that would couple neutrons and electrons. Such an interaction would show up as an additional contribution to the binding energy of an electron in an atom or ion, and can be accessed directly through the isotope shift of carefully chosen optical transitions. This field of research has flourished in the past few years, and I give an overview on the current state.