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News & Comments

A New Magnetic Relative of Higgs Boson Discovered

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Physicists have found a novel particle that is magnetically related to the Higgs boson. This particle - dubbed the axial Higgs boson - was found using an experiment that could fit a small space. Unlike the discovery of the Higgs boson, which required a huge particle acceleration power of the Large Hadron Collider (LHC).

These magnetic relatives of Higgs Bosons are expected to be a nominee for dark matter. What's interesting is the mass of the universe is almost 85% of dark matter. When the lead researchers showed Professor Kenneth Burch the newly discovered particles, the Professor was taken aback because t's not usual to find a new particle sitting on your tabletop.

In a quantum wiggle known as the axial Higgs mode, Burch and his colleagues saw a new kind of particle.

Unlike Higgs Bosons, these newly discovered axial Higgs bosons have a magnetic moment, magnetic strength, and orientation that produces a magnetic field. Thus, a complex theory is needed to explain it compared to Higgs Bosons.

With the discovery of the Higgs field, we gained confirmation of how the model's components gained mass while at rest. We are still using it to understand the mechanics of matter, and it was a huge success for physics.

Although single Higgs particles exist for a brief time in a quantum field, there are times when particles can impart mass, by a break in the collective behaviour of a surge of electrons called a charge density wave. The Higgs Mode can appear as a finite degree of angular momentum.

This discovery by straightforward experimental techniques could give way to the identification of new and exotic quantum materials.

KEYWORDS

Dark matter, Higgs Boson, Quantum mechanics, dark matter, axial Higgs bosons