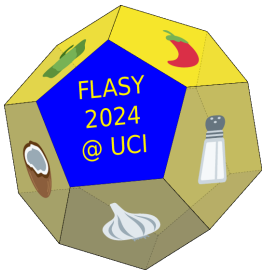

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Composite matter/antimatter hadron structure indicated experimentally at Texas Petawatt Laser Facility

Friday 28 June 2024 09:30 (30 minutes)

It has been theorized that, at the Universe's inception, there were equal amounts of matter and antimatter. One of the great mysteries of modern physics is the asymmetry between the amount of matter and the amount of antimatter apparent in the Universe. Here it is shown that, when a high-energy laser strikes a gold target, the gold is transmutated to platinum. This experimental result indicates that hadrons are actually composite particles containing both matter and antimatter. The implications of this new model of hadron structure are significant, impacting our understanding of cosmology, proton-proton chain reactions in stars, the expansion of the Universe, and beta decay in radioactive isotopes, among other key topics in physics.

Presenter: PICKRELL, Mark

Session Classification: Flavor in Quark Sector