

UH physicists claim new subatomic particle found

By Jan TenBruggencate
ADVERTISER SCIENCE WRITER

In the mystery-a-minute world of particle physics, University of Hawai'i scientists have helped launch a new one with the apparent discovery of a new kind of subatomic particle.

They're calling it Particle X (3872) because it seems to be different from the known classes of particles, and its mass is 3872 million electron volts, roughly the weight of a helium atom.

Its existence was suggested by the Belle Detector in the High Energy Accelerator Research Laboratory in Tsukuba Science City, Japan, and confirmed at the Fermi National Accelerator Laboratory in Illinois.

"There are some indications that the X (3872) may be the first example of a new type of subatomic particle, one where two more ordinary particles attach to each other, similar to the way atoms stick together to form molecules," said Stephen Olsen, a

University of Hawai'i professor of physics and astronomy.

"If so, this is the first glimpse of a whole new realm of subatomic physics.

UH colleague Thomas Browder said it's a case of building a much better detector, then finding all kinds of surprises.

Olsen worked with professor Sookyung Choi of Korea's Gyeongsang University on studying the decay products of a subatomic particle called a B meson. These survive about a trillionth of a trillionth of a second, and can decay into any of hundreds of different particles. About once per million times, the product is an X (3872), which survives about a billionth of a trillionth of a second.

The discovery of X (3872) will be published in the December issue of the physics journal *Physical Review Letters*.

Reach Jan TenBruggencate at jant@honoluluadvertiser.com or (808) 245-3074.