

Young-Kee Kim's Introductory Remarks

On July 4th, 2012, scientists at the Large Hadron Collider in Geneva, Switzerland, announced the discovery of a new particle called the Higgs boson. This Higgs particle could explain why elementary particles have mass. This announcement caused the kind of global sensation (hit slide #1) you don't always see in response to a scientific discovery. There were 55 media organizations at CERN including 11 global news, 21 prints, and 20 TV stations; there were 496 thousand distinct connections to seminar webcast; more than 1 billion people saw TV footage from 1,034 TV stations and 5,017 broadcasts.

Time magazine called the Higgs Boson "Particle of the Year". Let me play Time magazine's video.

<http://poy.time.com/2012/12/19/the-higgs-boson-particle-of-the-year/>

Some of you may have wondered where the word "Higgs" comes from and now you know. Yes, it is from a theorist "Peter Higgs" (hit slide #2). In fact, there are five more theorists who did similar work almost at the same time and (hit slide #3) here they are. In 2010, American Physical Society has given an award to these six physicists. So, if we want to be fair, the name of the particle should be (hit slide #4) "BEGHHK Particle". Yep, it is not easy to pronounce!

The Higgs particle has also become known by another misnomer: the God particle. This was the title of (hit slide #5) Leon Lederman's popular book on particle physics. This certainly created a stir! Why could he even make such an analogy? It was because the Higgs particle "creates" mass for all elementary particles. Without the Higgs, they could have no mass at all. This name has also stuck in the public consciousness, but fails to tell the whole truth.

If Higgs is responsible for giving mass to elementary particles, (hit slide #6) can we blame Higgs for our weight? Well, it turns out that only one percent of our body mass comes from mass of elementary particles and the rest, almost 99%, comes from kinetic energy or moving energy of these elementary particles. So, it is hard to blame Higgs for your weight. Sorry!

(hit slide #7) Why has the Higgs boson caused such a stir around the world? Why is the discovery such an important milestone in physics? Does it really explain how we exist? What's next? These are some of questions that we are asking right now. We will discuss answers to these questions tonight with our panel members.