Subatomic calculations indicate finite lifespan for universe

Irene Klotz, Reuters

(Reuters) - Scientists are still sorting out the details of last year's discovery of the Higgs boson particle, but add up the numbers and it's not looking good for the future of the universe, scientists said Monday.

"If you use all the physics that we know now and you do what you think is a straightforward calculation, it's bad news," Joseph Lykken, a theoretical physicist with the Fermi National Accelerator Laboratory in Batavia, Illinois, told reporters.

Lykeen spoke before presenting his research at the American Association for the Advancement of Science meeting in Boston.

"It may be that the universe we live in is inherently unstable and at some point billions of years from now it's all going to get wiped out," said Lykken, who is also on the science team at Europe's Large Hadron Collider, or LHC, the world's largest and highest-energy particle accelerator.

Physicists last year announced they had discovered what appears to be a long-sought subatomic particle called the Higgs boson, which is believed to give matter its mass.

Work to study the Higgs' related particles, necessary for confirmation, is ongoing.

If confirmed, the discovery would help resolve a key puzzle about how the universe came into existence some 13.7 billion years ago - and perhaps how it will end.

"This calculation tells you that many tens of billions of years from now, there'll be a catastrophe," Lykken said.

"A little bubble of what you might think of as an ‘alternative' universe will appear somewhere and then it will expand out and destroy us," Lykken said, adding that the event will unfold at the speed of light.

Scientists had grappled with the idea of the universe's long-term stability before the Higgs discovery, but stepped up calculations once its mass began settling in at around 126 billion electron volts - a critical number it turns out for figuring out the fate of the universe.

The calculation requires knowing the mass of the Higgs to within one percent, as well as the precise mass of other related subatomic particles.

"You change any of these parameters to the Standard Model (of particle physics) by

a tiny bit and you get a different end of the universe," Lyyken said.

Earth will likely be long gone before any Higgs boson particles set off an apocalyptic assault on the universe. Physicists expect the sun to burn out in 4.5 billion years or so, and expand, likely engulfing Earth in the process.

(Editing by David Adams and Todd Eastham)

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