

# 'I find Einstein close to the definition of God

*Antonio Ereditato, professor of experimental particle physics at the University of Bern, Switzerland, is known for his proton collisions. But it is his experiment that detected faster-than-light neutrinos that could leave a wider impact*

Abul Thakur | TIG

**What's special about the speed of light?**  
Speed of light is a universal constant, touching many areas of physics. It relates space with time and matter with energy. According to Einstein's theory of special relativity, the speed of light is constant with reference to any inertial frame. That means that irrespective of whether you are moving towards or away from the source of light, in your frame of reference, light will always travel at the

same speed. Also, it is the maximum speed at which matter and energy can travel in space.

**Hasn't your discovery proved Einstein wrong?**

I am the director of the Albert Einstein Center for Fundamental Physics. I find him close to the definition of God. Our results show that neutrinos did travel faster than light, but it has nothing to do with disproving Einstein. Firstly, it's a finding which points to an anomaly in the theory accepted so far. Secondly, it's not yet a discovery. Different physicists will perform the experiment using different equipments to see if the results are the same.

**Why has this not been detected earlier?**

Ever since neutrinos were detected 50 years back, they have been puzzling physicists. Even in 1987, when a supernova explosion that took place thousands of years ago was first noticed, neutrinos preceded light by a few hours in reaching our planet.

People say they should have reached years before. Maybe they did, but there was nobody to detect them. There are also many theories which

rubbish our results. I respect all of them but I don't acknowledge the use of theories to disapprove experiments. Science is defined on the basis of experimental result.

**Did these neutrinos travel through extra dominations to become faster than light?**

Richard Feynman (American physicist) once said, "I have approximate answers and possible beliefs in different degrees of certainty about different things, but I'm not absolutely sure of anything." I am a physicist. Religion believes and science doubts.

There is no word like 'believe' in my dictionary. However, I can smell that theories about multiple dimensions might have merit.

**Will the world change if your results get accepted by the scientific community?**

I don't want to dream. We will be repeating the experiment in March with some changes. Scientists in the US and Japan will also be doing similar experiments. Within a few months to a few years, we'll know if we are right or wrong. If we are correct, then we can always accommodate Einstein's theory the way Newtonian mechanics was accommodated. We still use Newton's theories for certain planetary calculations. GPS, nuclear power, atom bombs and lasers will continue to work although they are based in relativity.

## INTERVIEW

