

Closing of the International Conference on High Energy Physics

The Higgs boson and the theory of cosmic inflation attract the focus in ICHEP 2014

Valencia, July 9th 2014

Today, the 37th International Conference on High Energy Physics (ICHEP 2014), the most important meeting in the world for the field of particle physics, was officially closed in Valencia. Among the conclusions of the congress there stand out the many results presented about the Higgs boson and the presentations of the experiments BICEP2 and Planck about the theory of cosmic inflation. Whereas in the previous edition of ICHEP, two years ago in Melbourne, the discovery of the Brout-Englert-Higgs boson was the leading character, in Valencia there have been presented the results of two years of much more precise measurements, that allow to determine better and better its properties. As declared by Juan Fuster, co-president of the event, “we are much closer to having a first portrait of the Higgs boson”.

The speakers responsible for presenting the conclusions of the Conference, the American of South Korean origin Young-Kee Kim and the Spaniard Antonio Pich, coincided in emphasising the progress in the characterisation of this boson, whose discovery motivated the award of the 2013 Nobel Prize in Physics to François Englert and Peter Higgs. According to Pich, “The Higgs boson has not been discovered in ICHEP 2014, but we have been presented with plenty of evidence that it behaves as we expected”. The particle that was two years ago hardly more than a phantom is now “a tool to investigate a new kind of physics”, according to Kim, who will be the president of the next edition of ICHEP (Chicago 2016).

To Rolf-Dieter Heuer, director general of CERN, “the Higgs boson was the protagonist in Valencia, but the message I would keep is that there’s a lot at stake in the Run II of the LHC, which will start off next year”.

The other focus of attention during the Conference was the presence of Alan Guth, father of the theory of cosmic inflation, proposed 35 years ago and one of the hot topics in science this year, after the release of the results of the BICEP2 experiment, published in the journal Physical Review Letters barely three weeks ago and constituting a strong experimental support for the theory. The validity of BICEP2’s results is still waiting for a confirmation that can be provided by the Planck experiment; the Planck collaboration announced in ICHEP that these results should be released in less than one month. Other important topics during the Conference have been the properties of neutrinos and the search for dark matter, whose identity is still unknown but might be revealed by the new generation of detectors.

During the seven days of the Conference more than 500 works were presented, apart from the plenary sessions that reported on the state of the art of the various topical areas in the field, and also special sessions about the future of accelerators, the 60th anniversary of CERN and the industry opportunities in particle physics facilities.



- You can find the interviews with Alan Guth, Rof-Dieter Heuer, Young-Kee Kim, Antonio Pich and Juan Fuster at the ICHEP 2014 Newsletter: <http://ic hep2014.es/content/newsletters>
- For more information: <http://ic hep2014.es/>

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