



INTERNATIONAL COLLABORATION THE ITALIAN EXPERIMENT ICARUS WILL MOVE TO THE UNITED STATES

A transoceanic trip is planned for the Italian experiment ICARUS in 2017. Under the leadership of Nobel laureate Carlo Rubbia, from 2010 to 2014 ICARUS has been operating in the underground Laboratories of the Gran Sasso, where it has studied the artificial neutrino beam coming from CERN. Now, the largest liquid Argon detector in the world, 760 tonnes in weight and 20 metres long, after a period at CERN for maintenance and testing, will be transported to the Fermilab in Chicago. There, the detector will be integrated in a complex of three experiments, dedicated to the study of neutrinos. All three detectors will be filled with liquid Argon: this will allow a very sophisticated technology to be used to capture, through layers of super-thin wires, three-dimensional images of the traces left by the charged particles, produced by the interaction of neutrinos. "The liquid Argon time projection chamber is a very promising new technology that we originally developed with the collaboration of ICARUS- explains Carlo Rubbia - and we expect it to become the leading technology in large liquid Argon detectors due to its ability to record ionizing traces with pinpoint precision", concludes Rubbia. "The technique used by ICARUS to identify neutrinos produced artificially in an accelerator was developed by INFN, - underlines Antonio Masiero, Vice President of INFN - and we are proud that it can now make its substantial contribution to the American research on neutrinos, in the new experimental facility of the Fermilab". ■



COMPUTING ONE MILLION BILLION OPERATIONS PER SECOND FOR RESEARCH

After a brief period of testing and acceptance, Galileo, the new supercomputer installed at CINECA in Bologna, went into full operation. The investment is the result of a joint development between INFN and the University of Milan Bicocca. Galileo, which joins Fermi, the most powerful supercomputer for academic research in Italy, is dedicated to scientific and engineering computing and is available to the scientists of Italian research institutes and universities. Thanks to this new system, it will be possible to solve problems of interest to the most topical research, and also refine calculation strategies and programs that can then be supported at an international level in order to have access to the most powerful European supercomputing centres, such as PRACE, the infrastructure financed by the European Commission. "Galileo will provide a significant contribution to INFN research in computational theoretical physics, - explains Raffaele Tripiccione, coordinator of INFN activities in this area - providing adequate calculation tools to support the ambitious scientific programs in place in key areas of the physics of fundamental interactions and the physics of complex systems." ■