



INTERNATIONAL COLLABORATIONS

AN IMPORTANT STEP FORWARD TOWARDS THE FUTURE OF FERMILAB

A new fundamental step has been reached in the achievement of the objectives of the Proton Improvement Plan-II (PIP-II), the upgrade plan of Fermilab, the largest US laboratory for the study of high energy physics. The main goal of the plan, which aims to the construction of a new superconducting linear accelerator, is doubling in the near future the energy of the particle beams destined to the next experiments. On Friday 11 December the United States Department of Energy (DoE) formally approved the aims, timing and costs of the project, in which INFN participates with an important contribution, both technological, through the construction of fundamental components for the accelerator, and scientific, contributing with its know-how to the design of one of the most important experiments that will be hosted at Fermilab, DUNE, an international collaboration devoted to the study of neutrinos. The green light of the DoE comes nine months after the start of construction work of the PIP-II accelerator, which, once operational, will represent the heart of Fermilab and will project particle physics research into the future, with particular attention for the study on neutrinos, to which DUNE is dedicated. The experiment, in which 30 countries participate, will consist of two underground detectors located 1300 kilometers apart, with the task of identifying the characteristics of the neutrinos and their transformations on their way from Fermilab, where high-energy beams of these particles will be produced using the new superconducting accelerator, to Sanford Underground Research Facilities in South Dakota. ■