



Istituto Nazionale di Fisica Nucleare

THE INFN

In Italy, basic research in the field of the fundamental constituents of matter and the interactions that regulate their behaviour is conducted by INFN, the Istituto Nazionale di Fisica Nucleare (National Institute for Nuclear Physics). INFN is a community of over 5.000 people committed to ensuring that fundamental research provides its best results. Examples of this are the historical achievements of recent years with the Nobel Prize winning discoveries of the Higgs boson and gravitational waves. In short, INFN is a community that makes the so-called curiosity-driven research a national excellence.

Fundamental research and innovation

INFN carries out both theoretical and experimental research in the field of fundamental physics. In particular, there are five main research areas: subnuclear physics, astroparticle physics, nuclear physics, theoretical physics and technological and interdisciplinary research. In order to conduct the experiments, the Institute designs and produces, in its own laboratories and in collaboration with industry, cutting-edge technologies. Technologies which, although designed and developed for fundamental research, often lead to useful spin-offs for society, in the medical and the cultural heritage sectors or for the environment, to mention just a few examples.

Historically regional, naturally international

The INFN is present throughout the country: it is, in fact, historically organised into 20 linked divisions and groups, which are based in the physics departments of the main Italian universities. INFN therefore works in close cooperation with the university world and it conducts frontiers research in 4 national laboratories: in Frascati, Legnaro, Catania and in the heart of the Gran Sasso. The Gran Sasso Laboratory is today the largest underground laboratory in the world, dedicated in particular to the research of dark matter and the study of neutrinos. The INFN also counts: three national centers, the National Centre for Information and Telematics Technologies (CNAF) of Bologna, the Trento Institute for Fundamental Physics Applications (TIFPA), and the Galileo Galilei Institute dedicated to the study of theoretical physics found in Florence, and other infrastructures managed in collaboration with foreign institutions, such as the Italian-French EGO consortium, which hosts the Virgo gravitational wave experiment.

Most of the Institute's research activities are carried out in the context of international cooperation and INFN participates in experiments in the most prestigious laboratories and research centres in the world, including CERN in Geneva. The international dimension of the Institute is bidirectional: not only the INFN sees its researchers engaged in projects beyond national borders, like ESS, but it is also able to attract a large number of researchers from abroad, thanks to its research infrastructures.

Physics for culture

Furthermore, INFN has always played a fundamental role in the training of young graduates and PhD students and in the dissemination of scientific culture in society, with particular attention to schools.

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