



## **COLLABORATION AGREEMENTS**

### **INFN AND SANTA LUCIA IRCCS FOUNDATION WORK TOGETHER TO APPLY MEDICAL PHYSICS TO NEUROSCIENCE**

A collaboration between INFN and the Santa Lucia IRCCS Foundation of Rome, the leading Italian research institute in neuroscience, has been signed. The goal is to study life sciences, exploiting the skills and tools of medical physics, and to develop new diagnostic tools to make tests for preventing neurological diseases more accessible and effective.

A crucial example for neuroscience research is magnetic resonance, a known technology that has, however, immense possibilities for development. Magnetic resonance equipment captures the vibrations that the hydrogen nuclei, present in every organism, undergo in a magnetic field. The research is currently focused on studying other atoms, thus opening the possibility of going into the details of physiological and biochemical mechanisms that are, in part, still unexplored.

In addition, for neuroscience, the development of increasingly powerful equipment also means a greater capacity for analysing details. Today, the best diagnostic results are obtained with machines that operate at 3 teslas, which also make it possible to see the microscopic structures that compose the nervous system. The research of INFN, together with Santa Lucia IRCCS, will also include the use of ultra high-field (7 tesla) magnetic resonance machines exclusively for research purposes, to develop models that help us understand the deepest dynamics of the nervous system. ■