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The European Spallation Source: status of the project and future neutron oscillations searches

The European Spallation Source, ESS, currently under construction in Lund, will be the world's most powerful facility for research using neutrons. The ESS is organised as a European Research Infrastructure Consortium (ERIC) and currently has 13 member states: Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Norway, Poland, Spain, Sweden, Switzerland and the United Kingdom. Sweden and Denmark are the host countries, providing nearly half of the budget for the construction phase. The facility's unique capabilities (a higher useful flux of neutrons than any research reactor, and neutron beams with brightness that is up to two orders of magnitude higher than at any existing neutron source) will both greatly exceed and complement those of today's leading neutron sources, enabling new opportunities for researchers across the spectrum of scientific discovery, including materials, life sciences, energy, environmental technology, and fundamental physics. ESS, will be a major user facility at which researchers from academia and industry will investigate scientific questions using neutron beams. Neutron methods provide insights about the building blocks of matter not available by other means. They are used for both basic and applied research. Their impact spans many scientific disciplines including physics, chemistry, biology, materials science, engineering and archaeology.

In this talk I will give a general overview of the ESS, I will discuss the current status of the project and the future upgrade possibilities. In particular I will discuss the proposed Neutron Antineutron oscillation experiment, NNBAR, that will search for the baryon number violating process of $n \rightarrow \bar{n}$ *oscillation with a sensitivity of three orders of magnitude over the previously attained limit obtained at the Institut Laue-Langevin ILL.*

Studenti di laurea triennale, magistrale, dottorandi e tutti gli interessati sono invitati a partecipare.

Per informazioni rivolgersi a:
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