

J-PARC and Spin Physics

Shoji Nagamiya

*J-PARC Center, 2-4 Shirakata-Shirane,
Tokai-mura, 319-1195, Japan*

Abstract

From the spring of 2001 a new accelerator complex, called the J-PARC, has been under construction by the cooperation between two organizations, KEK and JAEA, where KEK is a high-energy organization and JAEA (Japan Atomic Energy Agency) is a nuclear energy organization in Japan. The main goal of the J-PARC is to accelerate and use high-power MW-class proton beams at 3 GeV and 50 GeV. The 3 GeV beams will be used for production of spallation neutron beams and muon beams for the study of materials and life sciences. A rapid cycle synchrotron of 25 Hz is prepared for this purpose. On the other hand, the 50 GeV beams will be used for production of intense kaon beams (for kaon factory) and neutrino beams, where the latter beams will be detected at the Superkamiokande detector located at about 300 km from the J-PARC site. The entire budget that were already approved is over 1,500 Oku Yen (about 1.3 billion dollars). Overall, 70% of the construction work is completed. The anticipated completion of the construction is late 2008.

Although the Phase 1 program does not include spin programs at J-PARC, an extensive discussion has been initiated on the scope of Phase 2 of the J-PARC. Among those a proposal for the J-PARC Spin is also included.

In the talk I would like to present the current status of the project including accelerator construction, physics opportunities and other major issues of the project.