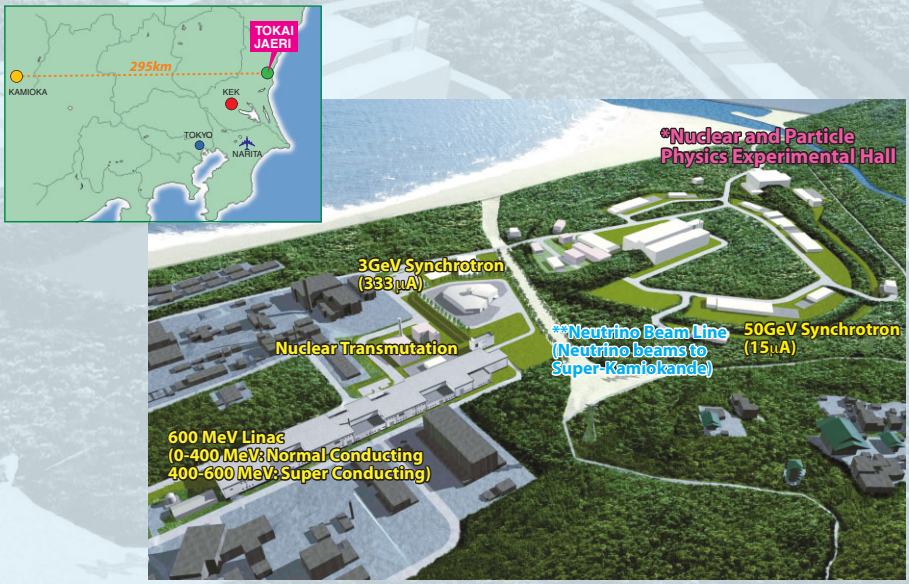
KEK
高エネルギー加速器研究機構

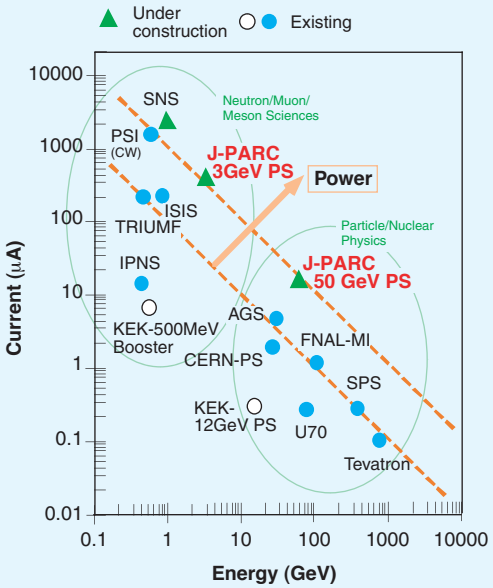
J-PARC
High Intensity Proton Accelerator Facility

J-PARC: Towards High Intensity Frontier!

http://j-parc.jp/

J-PARC, Japan Proton Accelerator Research Complex, is a joint project of KEK and JAERI (Japan Atomic Energy Research Institute). The construction started at the Tokai campus of JAERI, about 70 km northeast of KEK, in 2001, and the first beam is expected around 2007. The facility aims to create a world's leading accelerator complex with its high beam power. Using intense proton beams at 3-GeV and 50-GeV proton synchrotrons, a variety of secondary beams will be produced, and a broad range of sciences, from nuclear and particle physics to materials and life sciences, will be pursued.



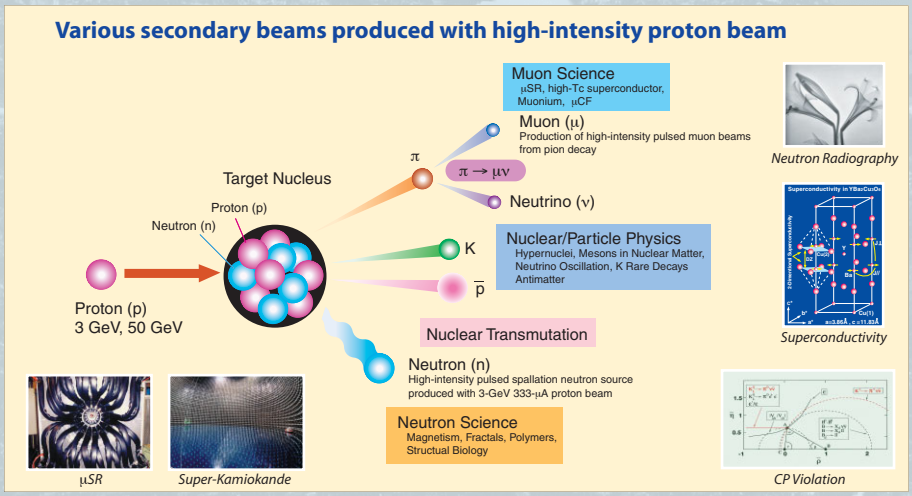


J-PARC will be a world's leading Mega-Watt class accelerator facility.

Accelerator components are being fabricated and tested.

Buildings are under construction at the site.

Nuclear and Particle Physics with a Variety of Secondary Beams!



Research of nuclear and particle physics will be conducted primarily at the 50-GeV Proton Synchrotron, such as kaons, pions, anti-protons, muons, and neutrinos. Scientific programs with the slow extracted beams will include: Rare kaon decays, CP violation / T violation, Hypernuclear spectroscopy, Hyperon scattering, Hadron physics. These studies will be performed at the Nuclear and Particle physics experimental Hall*.

A neutrino beam line** will be constructed to generate muon-neutrinos heading toward the Super-Kamiokande detector located at 295 km west of the J-PARC facility. On the details of the neutrino physics, see another poster.

Ideas of the future experiments using fast extracted beams, such as muon rare decays and low-energy antiproton physics, have been proposed. Necessary preparation at this stage for future extensions, such as shielding at the fast extraction section for muon storage rings and a low-energy antiproton facility, have been made.