The PRISM Project at the High-Intensity Proton Machine Project

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PRISM is a project at the high-intensity proton machine (previously called JHF) to make a high-intensity low-energy muon source with a narrow energy-spread and high purity. PRISM stands for "Phase Rotated Intense Slow Muon beam". The PRISM beam which kinetic energy is 20 MeV is designed to be mostly suitable for experiments with stopped muons. The aimed intensity is about $10^{11} - 10^{12}\mu^{\pm}$/sec, it is four orders of magnitude higher than that available at present. The layout of PRISM is shown in Fig.1. PRISM consists of the large solid-angle pion capture with a solenoid magnet field of about 10 T, the $\pi - \mu$ decay section consisting of 10-m long superconducting solenoid magnet, and the phase rotation section to make the beam energy spread narrower. To achieve phase rotation, an unique circular accelerator of a fixed-field alternating gradient synchrotron (FFAG), is considered to be used. The design and the present status of the PRISM project are presented.

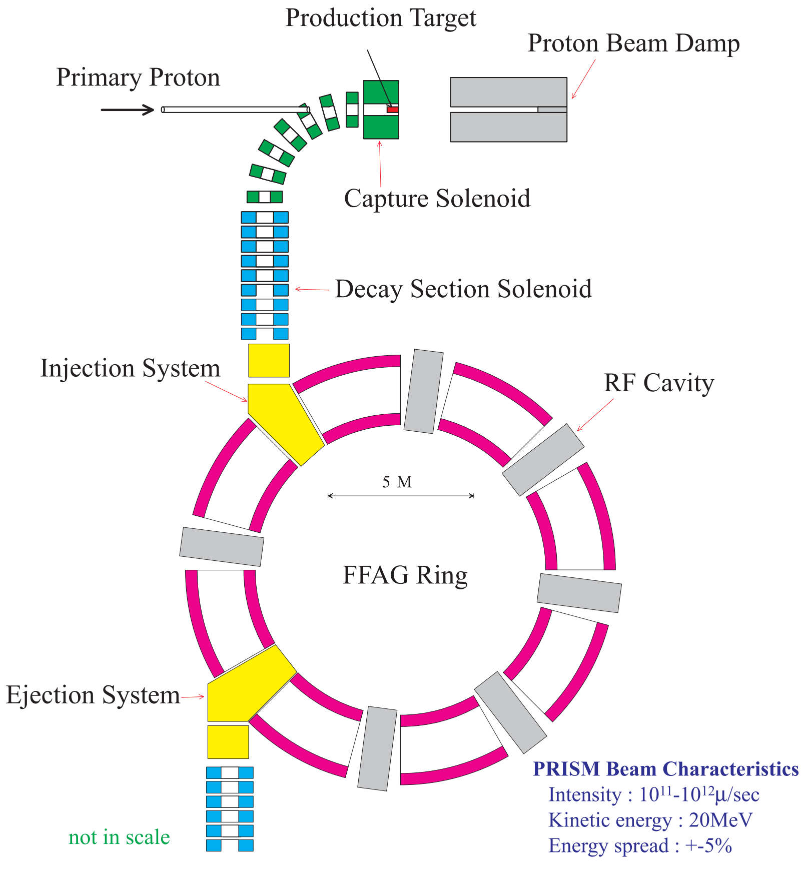

Figure 1: Schematic layout of PRISM