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Progress on the Development of Linear IFMIF Prototype Accelerator and the Beam Commissioning

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In the beam commissioning of the injector of linear IFMIF prototype accelerator (LIPAc) at the International Fusion Energy Research Center in Rokkasho, Japan the initial target performances was accomplished for Radio Frequency Quadrupole (RFQ) accelerator, of which assembling and commissioning will be started in 2016. At present, 100 keV/120 mA/20% duty cycle deuterium and 50 keV/74 mA/10% duty cycle hydrogen ion beams have been extracted stably from a 12 mm diameter aperture and transported up to RFQ entrance point with a low beam emittance of 0.32π mm mrad (rms, normalized). Neutron production by D-D reaction up to 2.4×10^9 n/s has been observed at the target of the emittance scanner whose front surface is covered by tungsten armor.

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