Contribution ID: **80** Type: **Oral presentation**

Position and beam size measurements for unbunched beams in transfer lines

The J-PARC Hadron beamline is a slow-extraction beamline with three primary beamlines. The A line (30 GeV, 65 kW, spill length of 2 seconds, cycle of 5.2 seconds) serves as a beamline for experiments utilizing secondary particles generated at the T1 target. The B-line (30 GeV, 24 W, spill length of 2 seconds, cycle of 5.2 seconds) branches out part of A-line beam, directly employing protons for experiments. The C-line (8 GeV, 0.33 kW, spill length of 0.5 seconds, cycle of 9.6 seconds) is a beamline of the bunched slow extraction to generate muons for experiments.
While a variety of monitors are prepared for beam diagnostics in these beamlines, this presentation focuses on introducing the main profile monitors, RGIPMs (Residual Gas Ionization Profile Monitor).
The RGIPMs in the primary beam lines has desirable features such as non-destructive measurement, radiation resistance, requring minimal maintenance, and good signal to noise ratio because the RGIPMs collect ionized electrons when the proton beams pass through residual gas of about 1 Pa.
This presentation provides a detailed explanation of the measurement mechanism and introduces the performance of RGIPM, including the stability of short-term and long-term profiles.

Primary author: TOYODA, akihisa (KEK)

Presenter: TOYODA, akihisa (KEK)

Session Classification: Slow Extraction Hardware and Machine Protection