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PO13 - The Beam Diagnostics System in the J-PARC 3 GeV Rapid Cycling Synchrotron

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The J-PARC 3-GeV Rapid Cycling Synchrotron (RCS) aims to deliver 1 MW proton beam to the materials and life science experimental facility (MLF) and the main ring synchrotron. In such a high intensity beam, there is a possibility to cause a severe radiation accident. To detect and prevent the radiation accident in the accelerator system, we developed the beam diagnostics system in RCS. This system includes a monitoring and interlock system of an abnormal state of the extraction beam to the mercury target of MLF. The radiation level of the gas in the tunnel were able to always observed by connecting radiation safety system and accelerator control system. Various kind of parameters, such as dump temperatures, radiation monitors, beam positions can be checked by one monitor to compare the influence each other.

Presenter: YAMAMOTO, Kazami (J-PARC/JAEA)

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