

Abstract Submitted
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Recent development of the Optical Transition Radiation detector at the J-PARC slow-extraction beam line AKIHISA TOYODA, KEIZO AGARI, ERINA HIROSE, MASAHARU IEIRI, YOHJI KATOH, MICHIFUMI MINAKAWA, HIROYUKI NOUMI, YOSHINORI SATO, YOSHIHIRO SUZUKI, HITOSHI TAKAHASHI, MINORU TAKASAKI, KAZUHIRO TANAKA, YOSHIKAZU YAMADA, YUTAKA YAMANOI, HIROAKI WATANABE, KEK — The J-PARC slow-extraction beam line under construction will provide a high intensity proton beam with a beam power of 750 kW. To handle such high intensity beam line safely, it is necessary to monitor the beam profile precisely without fault. Moreover, the beam loss at the beam monitor itself should be minimized to reduce the residual dose rate and the heat deposition at the beam monitor. As such beam profile monitor, we have developed the OTR (Optical Transition Radiation) detector. This monitor is composed of the OTR screen as a radiator and a camera system with an image intensifier to measure the OTR light. Because the OTR light intensity only depends on the reflectivity of the OTR screen, we can minimize a thickness of the OTR screen so that the problem of the residual dose and the heat deposition is expected to be resolved. In this talk, we will report the result of the beam test of a prototype OTR detector performed at KEK-PS beam line. The beam response, a background condition, and a readout system will be presented.

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