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Development of a Real-time In-Beam Monitor with Plastic Scintillation Fibers for Particle Therapy

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The verification of the particle range for the particle therapy in situ during the therapy is important and challenging technique to suppress the risks of miss irradiation (i.e. over dose or wrong position), and we have developed novel monitor consisting of plastic scintillation fibers and multi-anode photomultiplier tube. Here, the secondary protons are calculated to be traced the peak pf the Bragg peaks, and we succeeded in obtaining proton image. Moreover, the carbon beams images with different energies were detected during beaming with our detector to use as treatment plan.

Primary experiment

Authors: KUROSAWA, Shunsuke (Tohoku Univ. & Osaka Univ.); TAKAHASHI, Kennta (Yamagata Univ.); YAMAJI, Akihiro; MORIMOTO, Koji (RIKEN); IWAI, Takeo (Yamagata Univ.); SATO, Hiraku (Yamagata Univ.); TOKANAI, Fuyuki (Yamagata University)

Presenter: KUROSAWA, Shunsuke (Tohoku Univ. & Osaka Univ.)

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