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Beam profile measurement using the highly-oriented pyrolytic graphite

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The mitigation of heat loading is one of the important issues for beam instrumentation to measure the high-power proton beam. Recently, the highly-oriented pyrolytic graphite (HOPG) material was used for the target probe of the bunch-shape monitor at the front-end in the Japan Proton Accelerator Research Complex (J-PARC). Since the thermal conductivity of the HOPG is high, it is suitable to measure the beam profile under the condition of high heat loading. As an application of the HOPG, for example, the thin HOPG may be used as a substitutive material of the target wire for the transverse profile monitor such as the wire scanner monitor. The possibility of the HOPG target for the beam profile monitor is discussed from some results of the test experiment using the 3-MeV negative hydrogen ion beam at the test stand.

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Footnotes

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Yes

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