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Application of dielectric fibers for the electron beam diagnostic

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The dielectric fibers are widely used in technique for light transport and as the beam loss position monitor in particle accelerators. This work reports the results of the experimental investigations of polarisation radiation properties in the dielectric fibers for different fiber positions relative to an electron beam. The experimental results show that we can use fibers for non-invasive beam position monitoring. Additional information associated from measuring the spectral characteristics of the field of electron bunches at any point cross-section are also presented and discussed.

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