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Polarization Characteristics of Diffraction and Cherenkov Radiation from a Dielectric Screen

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It is well-known that the polarization is one of the most important radiation characteristic as well as intensity and spectrum. In this report we use the "polarization currents" approach [1, 2] to calculate the polarization characteristics (the Stokes parameters) of diffraction and Cherenkov radiation occurring as a result of uniform motion of a charge near a finite size dielectric screen. The Stokes parameters are determined by the geometry of a screen position relative to an electron beam as well as by permittivity of the screen material. Due to these reasons polarization of radiation can have the circular component (can become elliptic one).

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References

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2. Kruchinin K O and Karlovets D V 2012 *Russ. Phys. J.* **55** 9

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