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## PS1-14: Angular Momentum of Channeling Radiation from Relativistic Electrons and Positrons

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Electromagnetic waves is proven [1] to possess an intrinsic angular momentum. Two alternative and concordant approaches to the definition of the theory of the angular momentum of the electromagnetic field and general properties of the angular momentum of synchrotron radiation are described in [2].

The computer code BCM-1 [3] is able to calculate the trajectories of electrons and positrons at planar and axial channeling, as well as the corresponding radiation spectra. Previously this code was applied to calculate the angular-of-incidence of the total yield of the channeling radiation from the electrons [4].

In this paper, using the developed code BCM-1 we consider the orbital and spin angular momentum of the radiation from (100) channeled electrons and positrons in the thin Si, C and W crystals. The energies of electrons and positrons is chosen to be 155 (INFN-LNF) and 255 MeV (SAGA-LS). The possibility of experimental detection of such properties of channeling radiation is discussed.

### References

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