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Reaction Forces of Polarization Radiation

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Some eight decades after the first experimental observation of the polarization radiation mechanism, new systems of particle acceleration, beam diagnostics and radiation sources are still being designed and implemented, illustrating the continued and dynamic interest in this unique physical phenomenon. Polarization radiation, like many other processes of the particle-medium interaction, brings about the reaction forces which effect on the particle dynamics, on the one hand, and target's material, on the other.
In this report, we will consider only the reaction forces from the electromagnetic fields of polarization radiation affected on a charged particle, which interacts with the non-polar mediums with the arbitrary conductivity and the flat shape. Relying upon the polarization currents approach [1, 2], the direction of reaction forces will be analyzed depending on target's parameters and particle's overflight conditions. The obtained results will be essential to compile the equation of particle's motion in the particle-medium interaction process.
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References

[1] D.V. Karlovets, J. Exp. Theor. Phys. 113 (2011) 27.
[2] M. Shevelev, A. Konkov and A. Aryshev, Phys. Rev. A. 92 (2015) 053851.

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