

References

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Progress Report

CONTRIBUTION OF LIENARD-WIECHERT POTENTIAL IN THE ELECTRON BROADENING OF SPECTRAL LINE SHAPES IN PLASMAS

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Lienard-Wiechert or retarded electric and magnetic fields are produced by moving electric charges with respect to a rest frame. In hot plasmas, such fields may be created by high velocity free electrons. The resulting electric field has a relativistic expression that depends on the ratio of the free electron velocity to the light velocity c . In this work we consider the semi-classical dipole interaction between the ion radiators and the Lienard-Wiechert electric field of the free electrons and compute its contribution to the broadening of the spectral line shape in hot and dense plasmas.