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Classical theory of laser-assisted spontaneous bremsstrahlung<sup>1</sup> HARINDRANATH AMBALAMPITIYA, ILYA FABRIKANT, University of Nebraska - Lincoln — Laser-assisted spontaneous bremsstrahlung is a process in which a photon with frequency  $\Omega$  is created due to electron-atom or electron-ion scattering in the presence of an ac field with a lower frequency  $\omega$ . Previous studies of this process considered the electron-ion interaction perturbatively or focused on resonances which occur when the emitted photon's frequency is an integer multiple of the laser frequency. In the present paper, we investigate how the bremsstrahlung radiation is affected by the Coulomb focusing [1] when the attractive Coulomb potential focuses a part of the electron wave function during many electron-ion close encounters in the laser field. Using a purely classical approach, as justified in [2], we compute the radiation spectrum of a low-energy electron and report evidence for strong enhancement of the bremsstrahlung radiation due to the Coulomb focusing. <sup>1</sup> T. Brabec *et al.*, Phys. Rev. A **54**, R2551 (1996). <sup>2</sup> M. V. Fedorov and M. Yu. Ivanov, Laser Physics **3**, 365 (1993)

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