

Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

High energy photon emission from wakefields and its signatures in astrophysical Blazars¹ DEANO FARINELLA, XIAOMEI ZHANG, CALVIN LAU, SAM TAIMOURZADEH, YOONWOO HWANG, University of California, Irvine, JAMES KOGA, JAEA, TOSHIKAZU EBISUZAKI, RIKEN, TOSHIKI TAJIMA, University of California, Irvine — Episodic eruptions of accretion disks of AGNs (and Blazars) due to the Magneto-Rotational-Instability are related to the excitation of intense Alfvén waves and their subsequently mode converted EM pulses. These intense pulses are related to the emission of bursts of gamma rays and extreme high energy cosmic ray (EHECR) genesis in AGN and Blazars [1]. Wakefield acceleration and pondermotive acceleration [2] of electrons give rise to gamma ray emissions of the above through synchrotron radiation which can undergo inverse-compton scattering to attain high x-ray energies. We study additional emissions of gamma rays by the betatron oscillations and QED radiative processes in the intense accelerating fields.

[1] T. Ebisuzaki and T. Tajima, *Astropart. Phys.* **56**, 9(2014).

[2] C. Lau et al., *Phys. Rev. STAB* **18**, 024401(2015)

¹Supported by the Norman Rostoker Fund.

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Date submitted: 21 Jul 2015

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