

Abstract Submitted  
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**Exact relativistic kinetic theory of the full unstable spectrum of an electron-beam-plasma system with Maxwell-Jüttner distribution functions** ANTOINE BRET, Universidad Castilla la Mancha, LAURENT GREMILLET, DIDIER BENISTI, CEA, France — We present a detailed report of the entire unstable  $\mathbf{k}$  spectrum of a relativistic collisionless beam-plasma system within a fully Maxwell-Jüttner kinetic framework. The three competing classes of instabilities, namely, two-stream, filamentation, and oblique modes, are dealt with in a unified manner, no approximation being made regarding the beam-plasma densities, temperatures, and drift energies. We investigate the hierarchy between the competing modes [1], paying particular attention to the relatively poorly known quasiaelectrostatic oblique modes in the regime where they govern the system. The properties of the fastest growing oblique modes are examined in terms of the system parameters and compared to those of the dominant two-stream and filamentation modes [2].

[1] Bret A., Gremillet L., Bénisti D. and Lefebvre E., Phys. Rev. Lett, **100**, 205008, (2008)

[2] Bret A., Gremillet L. and Bénisti D, Phys. Rev. E, **81**, 036402, (2010)

Antoine Bret  
Universidad Castilla la Mancha

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