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The various manifestations of collisionless dissipation in wave propagation DIDIER BENISTI, OLIVIER MORICE, LAURENT GREMILLET, CEA, DAM, DIF f-91297 Arpajon Cedex, France — In this talk, we provide a theoretical description of collisionless dissipation [1], for an electrostatic wave propagating in a three-dimensional plasma, from the linear regime when it simply amounts to Landau damping, to the strongly nonlinear one when it significantly affects the wave group velocity, both, along and across the local wave number. We, moreover, discuss the impact of dissipation on the longitudinal and transverse extent of the wave packet, which allows us to reinterpret previously published kinetic simulations [2-4]. Finally, we illustrate our results on a two-dimensional simulation of stimulated Raman scattering.

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Didier Benisti
CEA, DAM, DIF f-91297 Arpajon Cedex, France

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