Vlasov analysis of relaxation of intense inhomogeneous charged beams[1] ANTONIO ENDLER, EVERTON SOUZA, IF-UFRGS, ROGER NUNES, FURG, RENATO PAKTER, FELIPE RIZZATO, IF-UFRGS — This work analyzes the dynamics of inhomogeneous, magnetically focused high intensity beams of charged particles. Initial inhomogeneities lead to density waves propagating transversely in the beam core, and the presence of transverse waves eventually results in particle scattering. Particle scattering off waves in the beam core ultimately generates a halo of particles with concomitant emittance growth. Emittance growth indicates a beam relaxing to its final stationary state, and the purpose of the present paper is to describe halo and emittance in terms of the Vlasov equation.

Antonio Endler
IF-UFRGS

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