Analysis of the transverse plasma wake field dynamics of a long relativistic electron beam in the Vlasov-Poisson-like pair of equations in purely local regime

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Poster Presentation

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An analysis of the transverse plasma wake field dynamics excited by a long relativistic electron beam is carried out in purely local regime, where the transverse beam spot-size is much greater than the plasma wavelength. This is done by taking into account the Vlasov equation, governing the kinetic spatiotemporal evolution of the transverse beam transport, that is coupled with the one governing the spatiotemporal evolution of the plasma wake potential energy.