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Modified scattering for small data solutions to the Vlasov-Maxwell system

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We will be interested in the solutions to the Vlasov-Maxwell system arising from sufficiently small and regular data. In particular, we will compare their asymptotic behavior with the ones of the solutions to the linearised system. Even if the electromagnetic fields have a nontrivial memory effect, they enjoy linear scattering since they approach, for large time, a solution to the vacuum Maxwell equations. In contrast, the distribution function merely satisfies a modified scattering statement. Due to the long-range effects of the Lorentz force, it converges along logarithmic corrections of the linear characteristics. In order to define these modified characteristics, a key step consists in identifying an effective Lorentz force governing the asymptotic behavior of the force field.

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