High Order Semi-Lagrangian schemes for the Vlasov equation

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Different strategies are presented for getting and analysing high order semi Lagrangian schemes. The main framework of study is the Vlasov Poisson system on the $1D \times 1D$ cartesian grid of phase space. We will especially consider the following points:

- high order splitting in time (fourth order)

- Semi Lagrangian schemes, in the case of small displacements (!)

- Discontinuous Galerkin method

- GPU implementation

Further extensions to curvilinear geometry and to the guiding center model are discussed.