A step towards addressing the temporal multi-scale problem.\footnote{This work is supported by AFOSR under grant numbers FA9550-07-0144 and FA9550-07-01-0092}

JING-MEI QIU, ANDREW CHRISTLIEB, Michigan State University, ROBERT KRASNY, University of Michigan — Plasmas display multi-scale features in space and in time. While application of methods such as Adaptive Mesh Refinement have made progress with regards to resolving multi-scale features in space, the temporal multi-scale nature of a two species plasma remains a challenging problem. Spectral Differed Correction (SDC) is intended to address the temporal multi-scale problem. In this work we consider the application of SDC to a particle formulation of the Vlasov-Poisson system as a way of accelerating temporal convergence. In particular, we consider the two-stream instability, as particle trapping is known to be an issue for temporal acceleration methods.

\footnote{This work is supported by AFOSR under grant numbers FA9550-07-0144 and FA9550-07-01-0092}