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A discontinuous Galerkin method for Vlasov - like systems[1] I.M. GAMBA, YINGDA CHENG, P.J. MORRISON, The University of Texas at Austin — The discontinuous Galerkin (DG) method developed by some of us for integrating the Vlasov-Poisson system[2] is described and generalized. Higher order polynomials on basis elements are used and extensive error analyses, including recurrence properties, are discussed. The method is conservative and preserves positivity of the distribution function. Several linear and nonlinear examples are treated that elucidate the DG methods ability to resolve filamentation and obtain high resolution BGK states.

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[2]R.E. Heath, I.M. Gamba, P.J. Morrison, and C. Michler, arXiv:1009.3046v1 [physics.plasm-ph].

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