

Second order expansion for Vlasov-Poisson and discretization of the quasi neutrality equation

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In a first part, we will present results of second order expansion in Vlasov-Poisson simulations [1]. Second order expansions permit to go beyond the classical linear analysis for some cases (two species/multi-dimensional case).

In a second part, we consider different discretizations for the quasi neutrality equation [2, 3].

References

- [1] Y. BARSAMIAN, J. BERNIER, S. HIRTOAGA, M. MEHREBERGER *Verification of 2Dx2D and two-species Vlasov-Poisson solvers*, <https://hal.archives-ouvertes.fr/hal-01668744>.
- [2] C. STEINER, M. MEHREBERGER, N. CROUSEILLES, P. HELLUY *Quasi-neutrality equation in a polar mesh*, <https://hal.archives-ouvertes.fr/hal-01248179v1>.
- [3] SHUANGXI ZHANG ET AL *Numerical comparison between four schemes to compute the double-gyroaverage term with respect to the short-scale perturbations*, preprint.