Solving the Vlasov equation with Julia

The Vlasov equation is of fundamental importance in plasma physics and particularly for simulations in Magnetic fusion and of Tokamak plasmas. I will present a way to use the Julia language to solve it numerically.

After a short introduction about the language, the first example showed the kinetic simulation of Vlasov-Poisson system by the semi-lagrangian method. The next example uses the Particle In Cell method to solve the problem.

We are basing much of this effort on a previous implementation in the Fortran language. We have found that the translation into Julia is easy and it is interesting to look at what it has to offer without degrading performance.