

Convergence analysis of Strang splitting for Vlasov–type equations

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A rigorous convergence analysis of the Strang splitting algorithm for Vlasov–type equations in the setting of abstract evolution equations is provided. It is shown that under suitable assumptions the convergence is of second order in the time step h . As an example, it is shown that the Vlasov–Poisson equation in 1+1 dimensions fits into the framework of this analysis. Also, a number of numerical experiments for the latter case are presented.