

L^2 HYPOCOERCIVITY METHODS FOR KINETIC FOKKER-PLANCK EQUATIONS WITH FACTORISED GIBBS STATES

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This contribution deals with L^2 hypocoercivity methods for kinetic Fokker-Planck equations with integrable local equilibria and a *factorisation* property that relates the Fokker-Planck and the transport operators. Rates of convergence in presence of a global equilibrium, or decay rates otherwise, are estimated either by the corresponding rates in the diffusion limit, or by the rates of convergence to local equilibria, under moment conditions. On the basis of the underlying functional inequalities, we establish a classification of decay and convergence rates for large times, which includes for instance sub-exponential local equilibria and sub-exponential potentials.