

Hypocoercive diffusion processes

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In many problems coming from mathematical physics, the association of a degenerate diffusion operator with a conservative operator may lead to dissipation in all variables and convergence to equilibrium. One can draw an analogy with the well-studied phenomenon of hypoellipticity in regularity theory, and actually both phenomena have been studied together. Now a distinctive theory of “hypocoercivity” is starting to emerge, with already some striking results, and several challenging open problems.