Séminaire de Probabilités et Statistique

Mardi 16 Mars à 14h00
ZOOM

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A second order analysis of McKean-Vlasov semigroups

This talk describes a joint work with Pierre Del Moral (Inria Bordeaux and CMAP Poytechnique). I will propose a second order differential calculus to analyze the regularity and the stability properties of the distribution semigroup associated with McKean-Vlasov diffusions. This methodology provides second order type expansions with remainder for both the evolution semigroup as well as the stochastic flow associated with this class of nonlinear diffusions. Bismut-Elworthy-Li formulae for the gradient and the Hessian of the integro-differential operators associated with these expansions will be also presented. Propagation of chaos properties will be investigated, with respect to the time parameter including bias, fluctuation error estimate as well as exponential concentration inequalities.