



复旦大学数学科学学院

数学综合报告会

报告题目: Self-interacting approximation to McKean-Vlasov long time limit

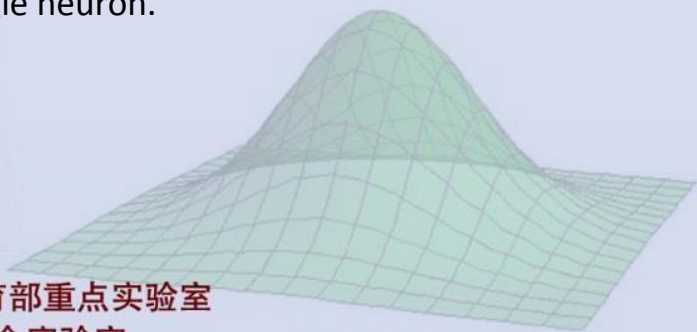
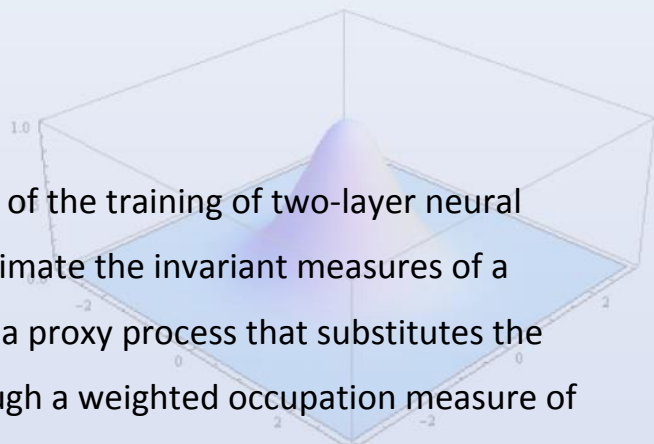
报告人: 任振杰 博士 (巴黎第九大学)

时间: 2024-04-16 星期二 10:30-11:30

地点: 光华东主楼2001

报告摘要:

Motivated by the mean-field optimization model of the training of two-layer neural networks, we propose a novel method to approximate the invariant measures of a class of McKean-Vlasov diffusions. We introduce a proxy process that substitutes the mean-field interaction with self-interaction through a weighted occupation measure of the particle's past. If the McKean-Vlasov diffusion is the gradient flow of a convex mean-field potential functional, we show that the self-interacting process exponentially converges towards its unique invariant measure close to that of the McKean-Vlasov diffusion. As an application, we show how to learn the optimal weights of a two-layer neural network by training a single neuron.



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