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Approximation of martingale couplings on the real line and stability in robust finance

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Ecole des Ponts ParisTech

Abstract

When approximating in Wasserstein distance the two marginals of a martingale coupling on the real by probability measures in the convex order, it is possible to construct a sequence of martingale couplings between these probability measures converging in adapted Wasserstein distance to the original coupling. We deduce the stability with respect to the marginal distributions of the Weak Martingale Optimal Transport problem in dimension one. As an application, we obtain the stability of the superreplication price of the VIX future. To deal with the subreplication price, we need a generalisation of our main result to extended martingale couplings with an extra parameter which enables to take into account additional information.

About the speaker

Prof. Jourdain is professor at Ecole des Ponts ParisTech and member of the INRIA research team Mathrisk.

Date:
Thursday, May 25, 2023 (HK Time)

Time:
4–5 pm (HK Time)

Zoom link:
https://hkust.zoom.us/j/95899852810?pwd=QnFvbGZxSUZjSHBrQUFDZDJOVXg3dz09

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