

## **Louis Bachelier Prize 2022: citation for Professor Beatrice Acciaio**

The 2022 Bachelier Prize has been awarded to Professor Beatrice Acciaio.

Beatrice Acciaio is a full Professor in the Department of Mathematics at ETH Zürich, Switzerland. Her contributions to mathematical finance span a broad spectrum of theories and applications ranging from the duality theory of utility maximisation, the analysis of optimal execution problems on Wasserstein space, robust finance and causal and martingale optimal transport, all the way to her most recent projects in machine learning involving the design of new Generative Adversarial Networks (GANs). Her work has been influential both in the academic literature and among market practitioners. It is published in peer-reviewed journals with the highest standards, in applied probability, control, optimisation and quantitative finance.

Her research contributions include

- generalisations of the usual duality theory of utility maximisation;
- groundbreaking contributions to model-independent finance with a general version of the fundamental theorem of asset pricing;
- development of the theory of causal optimal transport for stochastic processes and its applications to finance;
- applications of causal optimal transport to the design of new Machine Learning GANs to simulate video sequences from data.

Beatrice Acciaio's research is a nice demonstration of the interplay between rigorous mathematical modelling, data science and applications in finance.