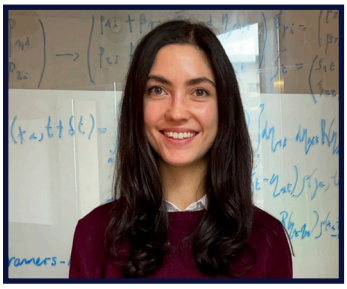
BIG DATA & ALGORITHMIC FINANCE



Natascha HEY
PhD Student, Ecole Polytechnique and CFM

PhD in statistical Physics/Econophysics at Ecole Polytechnique & Capital Fund Management since 2022.

Awards and Honors:
- CFM's 'Women in Quantitative Finance'-Scholarship (2022)
- Paul Klapper Physics Prize (2020)
- Physics Prize - CUNY (2020)
- Undergraduate Departmental Honors (2020)
- Nancy Metzler Scholarship (2020)
- Dean's list (2019-2020)
- Ruth Rudowsky Memorial Scholarship (2019)
- Esther's Book Fund (2019)

TRADING WITH CONCAVE PRICE IMPACT AND IMPACT DECAY – THEORY AND EVIDENCE

Natascha HEY, Lacopo MASTROMATTEO, Johannes MUHLE-KARBE, and Kevin WEBSTER.

We study statistical arbitrage problems accounting for the nonlinear and transient price impact of metaorders observed empirically. We show that simple explicit trading rules can be derived even for general nonparametric alpha and liquidity signals, and also discuss extensions to several impact decay timescales. These results are illustrated using a proprietary dataset of CFM metaorders, which allows us to calibrate the levels, concavity, and decay parameters of the price impact model and analyze their effects on optimal trading.

Download the paper