



HELLENIC REPUBLIC
National and Kapodistrian
University of Athens
DEPARTMENT OF ECONOMICS

Research Seminar Series in Economic Sciences, 2023-2024

Speaker: Marc Hallin, *Professor at Université libre de Bruxelles*

Webpage: <https://www.ulb.be/fr/marc-hallin-1>



Title: “Nonparametric Multiple-Output Center-Outward Quantile Regression”

Date & Time: Wednesday, November 8th, 2023, 16:00 - 17:30

Place: Grypario Megaro (Sofokleous 1) | 4th floor | Lecture Room “Kosmas Psychopedis” (416)

Url: https://www.econ.uoa.gr/ereynitika_seminaria_research_seminars/

Abstract:

Based on novel measure-transportation-based concepts of multivariate quantiles, we are considering the problem of nonparametric multiple-output quantile regression. Our approach defines nested conditional center-outward quantile regression contours and regions with given conditional probability content the graphs of which constitute nested center-outward quantile regression “tubes” with given unconditional probability content; these probability contents do not depend on the underlying distribution. Empirical counterparts of these concepts are constructed, yielding interpretable empirical contours, regions, and tubes which are shown to consistently reconstruct (in the Pompeiu-Hausdorff topology) their population versions. Our method is entirely non-parametric and performs well in simulations--possibly with heteroskedasticity and nonlinear trends. Its potential as a data-analytic tool is illustrated on some real datasets.

Organizers: Simos Meintanis, *Professor*

Thank you.



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