

Ecole SITI
Département
« IMATH »
Ingénierie
Mathématique

Statistique appliquée

Séminaire de Statistique appliquée

mercredi 20 février 2013 de 11H à 12H

salle 17.2.20

(292 rue Saint Martin – Paris 3^{ème})

« Distortions of multivariate risk measures: a level-sets based approach »

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Abstract

We propose a parametric model for multivariate distributions. The model is based on distortion functions, i.e. some transformations of a multivariate distribution which permit to generate new families of multivariate distribution functions. We derive some properties of considered distortions. A suitable proximity indicator between level curves is introduced in order to evaluate the quality of candidate distortion parameters. Using this proximity indicator and properties of distorted level curves, we give a specific estimation procedure.

The estimation algorithm is mainly relying on straightforward univariate optimizations, and we finally get parametric representations of both multivariate distribution functions and associated level curves.

Our results are motivated by applications in multivariate risk theory. The methodology is illustrated on real examples.

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