



Labex MME-DII

Modèles Mathématiques et Économiques
de la Dynamique, de l'Incertain et des Interactions
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CHAIRE INTERNATIONALE

Extreme Value Limit Theory without Extreme Value Distributions

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Wednesdays, 10:00-11:00 and 11:30-12:30

January 8th, 15th and 23rd, 2014

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Abstract O'Brien's limit theory for maxima of stationary weakly dependent random sequences can be called „a single sequence method” for it completely describes asymptotic properties of laws of maxima in terms of exceedances over a single sequence of thresholds. We will recall and develop O'Brien's theory in several directions, including limit theory for order statistics, multivariate extremes and random fields.

Content

1. Phantom distribution function and criteria for its existence.
2. Extremal index of a stationary sequence.
3. An asymptotic r -1-dependent representation for r -th order statistics from a stationary sequence.
4. Understanding joint distributions of order statistics.
5. A multisequence method for multivariate extremes.
6. Phantom distribution function and extremal index for stationary random fields.