

Outline of Courses

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1 Introduction

2 Empirical Process

Bibliography: Weak convergence and empirical process theory: application to statistics (van der Vaart and Wellner), Applications of empirical process theory (van de Geer), Adaptive l^1 estimation Statistical Neerlandica 2002 (Loubes and van de Geer)

2.1 An introduction to empirical processes

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3 Wavelet estimators

Bibliography: Donoho, Johnstone Kerkyacharyan and Picard (papers from 1996 to 2002), A wavelet tour of signal processing (S. Mallat)

3.1 Introduction to wavelet bases**3.2 Approximation properties****3.3 Linear estimators****3.4 Non linear estimators: thresholding methods****4 Model selection estimators**

Bibliography: Birgé and Massart (papers from 1997 to 2002), Cours de Saint Flours de Massart (2004).

4.1 Definitions and purpose**4.2 Gaussian concentration****4.3 Model selection vs Thresholding****4.4 An application to inverse problems**

Bibliography: Regularization of inverse problems (Engl, Hanke, Neubauer)