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## PAC-Bayesian approach for kernel methods

Joseph Salmon, Erwan Le Pennec

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Journées MAS 2010, Bordeaux

Session : Lois à priori parcimonieuses et estimation en grande dimension

## **PAC-Bayesian approach for kernel methods**

par **Joseph Salmon** et Erwan Le Pennec

In this work on regression with Gaussian error, we study an aggregation procedure relying on the exponential weighting scheme described in Dalalyan and Tsybakov [1]. We obtain PAC-Bayes oracle inequalities in this context valid in both the fixed design case and the random design case. These inequalities are obtained by techniques derived from those described in Catoni [2] and Audibert [3]. We apply those results to the selection of an "optimal" window for Nadaraya-Watson type estimators and obtain a provably efficient estimator implemented with a MCMC-type algorithm similar to the one proposed by Dalalyan and Tsybakov [3].

*Références :*

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- [3] J.-Y. Audibert, Aggregated estimators and empirical complexity for least square regression, Ann. Inst. H. Poincaré Probab. Statist., vol. 40, no. 6, pp. 685-736, 2004.

*Adresses :*

Joseph SALMON

Laboratoire de Probabilités et Modèles Aléatoires, Univ. Paris 7  
175, rue du Chevaleret  
75013 Paris

E-mail : [salmon@math.jussieu.fr](mailto:salmon@math.jussieu.fr)

<<http://people.math.jussieu.fr/~salmon/>>

Erwan LE PENNEC

Laboratoire de Probabilités et Modèles Aléatoires, Univ. Paris 7  
Projet SELECT / INRIA Saclay / Université Paris Sud  
LPMA

175, rue du Chevaleret

75013 Paris

E-mail : [salmon@math.jussieu.fr](mailto:salmon@math.jussieu.fr)

<<http://people.math.jussieu.fr/~salmon/>>

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