

# Publications 2000-2007

## Phd. Thesis

[Pe05] Pelckmans K., [Primal-Dual Kernel Machines](#), Ph.D. thesis, Faculty of Engineering, K.U.Leuven (Leuven, Belgium), May 2005, 280 p.

## Publications in International Journals and Book Chapter

- [PSD05a] Pelckmans K., Suykens J.A.K., De Moor B., ``[Building Sparse Representations and Structure Determination on LS-SVM Substrates](#)”, Neurocomputing Special Issue, Vol. 64, pp. 137-159, march, 2005, **Published In Neurocomputing**, (*impact factor 0.860*).
- [PGD05] Pelckmans K., Goethals I., De Brabanter J., Suykens J.A.K., De Moor B., ``[Componentwise Least Squares Support Vector Machines](#)”, Chapter in *Support Vector Machines: Theory and Applications*, (Wang L., ed.), series *Studies in Fuzziness and Soft Computing*, Vol. 177, ISBN: 3-540-24388-7, DOI: 10.1007/b95439, Springer-Verlag GmbH, 2005, **Published**.
- [GPS05a] Goethals I., Pelckmans K., Suykens J.A.K., De Moor B., ``[Identification of MIMO Hammerstein Models using Least Squares Support Vector Machines](#)”, 2005, Automatica, vol. 14, nr. 4, pp. 1263-1272. **Published in Automatica** (*Impact factor 2.273*).
- [PDS04] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., ``[The differogram: Nonparametric noise variance estimation and its use for model selection](#)”, 2004, Neurocomputing, vol. 69, Issues 1-3, pp. 100-122, **Published in Neurocomputing**, (*Impact factor 0.860*).
- [PED05] Pelckmans K., Espinoza M., De Brabanter J., Suykens J.A.K., De Moor B., ``[Primal-Dual Monotone Kernel Regression](#)”, Neural Processing Letters, vol. 22, no. 2, Oct 2005, pp. 171-182, 2005, **Published in Neural Processing Letters**, (*Impact factor 0.753*).
- [PDS05a] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., ``Handling Missing Values In Support Vector Machine Classifiers”, 2005, Neural Networks, vol. 18, pp. 684-692, 2005, **Published in Neural Networks**, (*Impact factor 2.000*).
- [GPS05b] Goethals I., Pelckmans K., Suykens J.A.K., De Moor B., ``[Subspace Identification of Hammerstein Systems using Least Squares Support Vector Machines](#)”, 2005, IEEE Transactions on Automatic Control, Special Issue on System Identification, Vol. 50, no. 10, pp. 1509-1519, 2005, **Published in IEEE Transactions on Automatic Control**, (*Impact factor 2.772*).
- [PSD06a] Pelckmans K., Suykens J.A.K., De Moor B., ``[Additive regularization: fusion of training and validation levels in Kernel Methods](#)”, 2006, Machine Learning, vol. 62, no. 3, Mar. 2006, pp. 217-252, **Published In Machine Learning**, (*Impact factor 2.654*).
- [PSD07a] Pelckmans K., Suykens J.A.K., De Moor B., ``[A convex Approach to Validation-based Learning of the Regularization Constant](#)”, IEEE transactions on Neural Networks, vol. 18, no. 3, pp. 917-920, **Published in IEEE Transactions on Neural Networks** (*Impact Factor 2.620*).

## Submitted Manuscripts

- [DPS02a] De Brabanter J., Pelckmans K., Suykens J.A.K., Vandewalle J., De Moor B., ``[Robust cross-validation score function for LS-SVM non-linear function estimation](#)”, 2002, **Submitted for publication in Neural Networks**.
- [PDS07] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., “Support and Quantile Vector Tubes”, **Submitted**.
- [VPD07] Van Herpe T., Pelckmans K., De Brabanter J., Janssens F., De Moor B., Vanden Berghe G., ``Assessing the accuracy of glycemia sensors: The GLYCENSIT procedure”, **Submitted**.
- [PSD07b] Pelckmans K., Suykens J.A.K., De Moor B. “A Maximal Average Margin Classifier”, **Submitted**.
- [PVS07] Pelckmans K., Suykens J.A.K., De Moor B., “Predictive Modeling of Failure-time Data”, **In preparation**.
- [PPDW07] Van de Plas R., Pelckmans K., De Moor B., Waelkens E., “[Spatial Querying of Imaging](#)”.

[Mass Spectrometry Data for the Biochemical Characterization of Anatomical Regions in Tissue](#)", Internal Report 07-171, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2007, **Submitted**.

### Publications in Proceedings International Conferences with Review Procedure

- [DPS02b] De Brabanter J., Pelckmans K., Suykens J.A.K., Vandewalle J., "Robust cross-validation score function for non-linear function estimation", in *Proceedings of the International Conference on Artificial Neural Networks (ICANN 2002)*, Madrid, Spain, Aug. 2002, pp. 713-719, **Published**.
- [DPS03] De Brabanter J., Pelckmans K., Suykens J.A.K., De Moor B., Vandewalle J., "[Robust complexity criteria for nonlinear regression in NARX models](#)", in *Proceedings of the 13th System Identification Symposium (SYSID 2003)*, Rotterdam, the Netherlands, Aug. 2003, pp. 79-84, **Published**.
- [PDS03] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., "[Variogram based noise variance estimation and its use in Kernel Based Regression](#)", in *Proceedings of the IEEE Workshop on Neural Networks for Signal Processing (NNSP 2003)*, Toulouse, France, Sept. 2003, pp. 199-208, **Published**.
- [PSD04a] Pelckmans K., Suykens J.A.K., De Moor B., "[Sparse LS-SVMs using additive Regularization with a penalized validation criterion](#)", in *Proceedings of the 12e European Symposium on Artificial Neural Networks*, (ESANN 2004), Bruges, Belgium, Apr. 2004, pp. 435-440, **Published**.
- [PSD04b] Pelckmans K., Suykens J.A.K., De Moor B., "[Alpha and beta stability for additively regularized LS-SVMs via convex optimization](#)", in *Proceedings of the 16th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2004)*, Leuven, Belgium, Jul. 2004, **Published**.
- [PSD04c] Pelckmans K., Suykens J.A.K., De Moor B., "[Regularization constants in LS-SVMs : a fast estimate via convex optimization](#)", in *Proceedings of the International Joint Conference on Neural Networks (IJCNN 2004)*, Budapest, Hungary, Jul. 2004, pp. 699-704, **Published**.
- [EPH04] Espinoza M., Pelckmans K., Hoegaerts L., Suykens J., De Moor B., "[A comparative study of LS-SVMs applied to the Silver box identification problem](#)", in *Proceedings of the 6th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2004)*, Stuttgart, Germany, Sep. 2004, **Published**.
- [GPS04] Goethals I., Pelckmans K., Suykens J.A.K., De Moor B., "[NARX identification of Hammerstein Models using least squares support vector machines](#)", in *Proceedings of the 6th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2004)*, Stuttgart, Germany, Sep. 2004, pp. 507-512, **Published**.
- [PSD04d] Pelckmans K., Suykens J.A.K., De Moor B., "[Morozov, Ivanov and Tikhonov regularization based LS-SVMs](#)", in *Proceedings of the 11th International Conference on Neural Information Processing (ICONIP 2004)*, Calcutta, India, Nov. 2004, **Published**.
- [PDS05b] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., "[Maximal Variation and Missing Values for Componentwise Support Vector Machines](#)", 2005, *International Joint Conference on Neural Networks (IJCNN 2005)* , **Published**.
- [PSD05b] Pelckmans K., Suykens J.A.K., De Moor B., "Componentwise Support Vector Machines for Structure Detection", International Conference on Artificial Neural Networks (ICANN), 2005, **Published**.
- [PGS05] Pelckmans K., Goethals I., Suykens J.A.K., De Moor B., "On model complexity control in identification of Hammerstein Systems", Conference on Decisions and Control (CDC), 2005, **Published**.
- [GPH05] Goethals I., Pelckmans K., Hoegaerts L., Suykens J.A.K., De Moor B., "Subspace intersection identification of Hammerstein-Wiener systems", Conference on Decisions and Control (CDC), 2005, **Published**.
- [DPS05] De Brabanter J., Pelckmans K., Suykens J.A.K., De Moor B., "Prediction Intervals for NAR Model Structures Using a Bootstrap Method", Proceedings of the 2005 International Symposium on Nonlinear Theory and its Applications (NOLTA 2005), 2005, **Published**.
- [DPS06] De Brabanter J., Pelckmans K., Suykens J.A.K., De Moor B., "Generalized Likelihood Ratio Statistics based on Bootstrap Techniques for Autoregressive models", in Proceedings of the

- 14th IFAC symposium on System Identification (SYSID 2006), 2006, **Published**.
- [PKS06] Pelckmans K., Karsmakers P., Suykens J.A.K., De Moor B., ``[Ordinal Least Squares Support Vector Machines - a Discriminant Analysis Approach](#)`, Proceedings of the 2006 IEEE International Workshop on Machine Learning for Signal Processing (MLSP2006), Dublin, Ireland, 2006 , **Published**.
- [PVC06] Pelckmans K., Van Vooren S., Coessens B., Suykens J.A.K., De Moor B., ``[Mutual Spectral Clustering: Microarray Experiments Versus Text Corpus](#)`, in *Proc. of the workshop on Probabilistic Modeling and Machine Learning in Structural and Systems Biology (PMSB 2006)*, Helsinki, Finland, p1-4, Jun. 2006, **Published**.
- [PSD06b] Pelckmans K., Suykens J.A.K., De Moor B., ``[The Kingdom-Capacity of a Graph: On the Difficulty of Learning a Graph Labelling](#)`, Workshop on Mining and Learning on Graphs (MLG 2006), ECML, Berlin, Germany, pp. 1-8, 2006, **Published**.
- [PSS07] Pelckmans K., Shawe-Taylor J., Suykens J.A.K., De Moor B., ``[Margin based Transductive Graph Cuts using Linear Programming](#)`, in *Proc. of the 11th International Conference on Artificial Intelligence (AISTATS 2007)*, San Juan, Puerto Rico, Apr. 2007, pp. 360-367, **Published**.
- [PSD07d] Pelckmans K., Suykens J.A.K., De Moor B., ``[Convex Optimization for the Design of Learning Machines](#)`, in *Proceedings of the 15th European Symposium on Artificial Neural Networks (ESANN2007) Bruges, Belgium, 2007*, **Published**.
- [KPS07] Karsmakers P., Pelckmans K., Suykens J.A.K., ``[Multi-class kernel logistic regression: a fixed-size implementation](#)`, Accepted for publication in *Proc. IJCNN 2007*. **Accepted**.
- [KPSH07] Karsmakers P., Pelckmans K., Suykens J.A.K., Van Hamme H., ``[Fixed-Size Kernel Logistic Regression for Phoneme Classification](#)`, Internal Report 07-63, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2007. Accepted for publication in *Interspeech 2007*, **Accepted**.
- [VPSV07] Van Belle V., Pelckmans K., Suykens J.A.K., Van Huffel S., ``[Support vector machines for survival analysis](#)`, Accepted for publication in *Proc. of the Third International Conference on Computational Intelligence in Medicine and Healthcare, Sherwell Centre, University of Plymouth, Plymouth, England, 2007*, **Accepted**.
- [PSD07e] Pelckmans K., Suykens J.A.K., De Moor B., ``[Transductive Rademacher Complexities for Learning over a Graph](#)`, Workshop on Mining and Learning on Graphs (MLG 2007), Firenze-Italy, pp. 1-4, 2007, **Accepted**.
- [PSD07f] Pelckmans K., Suykens J.A.K., De Moor B., ``[A Risk Minimization Principle for a Class of Parzen Estimators](#)`, Internal Report 07-37, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2007. Accepted for publication in *Neural Information Processing Systems, NIPS2007*, **Accepted**.

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- [PSD05c] Pelckmans K., Suykens J.A.K., De Moor B. "Convex Clustering Shrinkage", **Internal Report** 05-226, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2005, PASCAL Workshop on Statistics and Optimization of Clustering Workshop, Windsor, UK, 2005, **Presented**.
- [PSD05d] Pelckmans K., Suykens J.A.K., De Moor B. "Clustering and Staircases", **Internal Report** 05-226, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), Workshop on Neural Information Processing Systems (NIPS 2005), **Presented**.
- [PSD05e] Pelckmans K., Suykens J.A.K., De Moor B. "A Convex Approach to Learning the Ridge using CV", **Internal Report** 05-216, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), Workshop on Neural Information Processing Systems (NIPS 2005), **Presented**.
- [PSD07g] Pelckmans K., Suykens J.A.K., De Moor B., ``[Transductive Learning over Graphs: Incremental Assessment](#)`, 2007, **Presented**.

#### Internal Reports

- [PSV02] Pelckmans K., Suykens J.A.K., Van Gestel T., De Brabanter J., Lukas L., Hamers B., De Moor B., Vandewalle J., ``[LS-SVMlab : a Matlab/C toolbox for Least Squares Support Vector Machines](#)`, **Internal Report** 02-44, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2002.
- [PSV02] Pelckmans K., Suykens J.A.K., Van Gestel T., De Brabanter J., Lukas L., Hamers B., De

Moor B., Vandewalle J., "LS-SVMlab Toolbox User's Guide", **Internal Report** 02-145, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2002.

- [BHP02] Barrero O., Hoegaerts L., Pelckmans K., De Moor B., "[Linear and non-linear modeling in Soft4s](#)", **Internal Report** 02-188, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2002.
- [DPS04] De Brabanter J., Pelckmans K., Suykens J.A.K., De Moor B., Vandewalle J., "[Robust statistics for Kernel Based NARX Modeling](#)", **Internal Report** 04-38, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2004.
- [PSD05f] Pelckmans K., Suykens J.A.K., De Moor B. "Selection Amongst Alternative Variables in Regression Analysis", **Internal Report** 05-141, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2005.
- [PDS06] Pelckmans K., De Brabanter J., Suykens J.A.K., De Moor B., "[Risk Scores, Empirical Z-estimators and its application to Censored Regression](#)", **Internal Report** 06-105, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2006.
- [PSD06c] Pelckmans K., Suykens J.A.K., De Moor B., "[Robust Inference for Empirical Graphs: A Compression Approach](#)", **Internal Report** 06-180, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2006.
- Karsmakers P., Gierlichs B., Pelckmans K., De Cock K., Suykens J.A.K., Preneel B., De Moor B., "[Side channel attacks on cryptographic devices as a classification problem](#)", **Internal Report** 07-36, ESAT-SISTA, K.U.Leuven (Leuven, Belgium), 2007.

### Presentations with Accepted Abstract

- Van Gestel T., Suykens J.A.K., Pelckmans K. and De Moor B., "Bayesian Inference for LS-SVMs on Large Datasets and its Implementation", in Abstract book of 21st Benelux Meeting on Systems and Control, Veldhoven, the Netherlands, Mar. 19-21, 2002.
- Pelckmans K., Suykens J.A.K. and De Moor B., "Robust Complexity Criteria for Nonlinear Regression", 22nd Benelux Meeting on Systems and Control, Lommel, Belgium, mar. 19-21, 2003.
- Pelckmans K., Suykens J.A.K. and De Moor B., "Sparse LS-SVMs using Additive Regularization with a Penalized Validation Criterion", 23rd Benelux Meeting on Systems and Control, Helvoirt, the Netherlands, mar. 17-19, 2004.
- Pelckmans K., Suykens J.A.K. and De Moor B., "On the Regularization Path in Bi-criterion Optimization Problems", 25rd Benelux Meeting on Systems and Control, Heeze, the Netherlands, mar. 13-15, 2006.
- Pelckmans K., Suykens J.A.K., "On the Regularization Path in Bi-criterion Optimization Problems", Center of excellence: optimization and engineering, Leuven, Belgium, 2006.
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- Pelckmans K., Suykens J.A.K, De Moor B., "Predictive Mutual Clustering: Learning in Bioinformatics", LEARNING 2006, Barcelona, Spain, 2006.
- Pelckmans K. Suykens J.A.K., De Moor B., "Transductive Inference for Graph Labeling", IAP 5, Leuven, Belgium, 2006.
- Pelckmans K., Suykens J.A.K., De Moor B., "Transductive Rademacher Complexities for Learning over a Graph", 22st European Conference on Operational Research, (EURO XXII), Prague, Czech Republic, 2007
- Pelckmans K., Suykens J.A.K., De Moor B., "Transductive Rademacher Complexities for Learning over a Graph", 6<sup>th</sup> Slovenian International Conference on Graph Theory, Slovenia, Bled, 2007.