

# Olga KLOPP

Professeur

Département: Systèmes d'information, sciences de la décision et statistiques  
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## INTERETS DE RECHERCHE

Analyse des données statistiques

## FORMATION

- |      |   |
|------|---|
| 2016 | HDR, Université Paris X Nanterre, France                                    |
| 2004 | Doctorat en Mathématiques, Université Nationale Autonome de Mexico, Mexique |
| 1997 | Master en Mathématiques, Université d'État Lomonossov de Moscou, Russie     |

## EXPERIENCE PROFESSIONNELLE

### Positions académiques principales

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|----------------|---|
| 2023 - Présent | Professeur, ESSEC Business School, France                               |
| 2017 - 2023    | Professeur associé, ESSEC Business School, France                       |
| 2012 - 2017    | Maître de conférences, Université Paris X Nanterre, France              |
| 2004 - 2008    | Maître de conférences, Université Nationale Autonome de Mexico, Mexique |

### Autres affiliations académiques

- |             |   |
|-------------|---|
| 2018 - 2024 | Responsable académique DD CentraleSupelec et ENSAE, ESSEC Business School, France |
| 2018 - 2023 | Responsable de filière scientifique, ESSEC Business School, France                |
| 2017 - 2017 | Délégation CNRS, Centre de recherche en économie et statistique (CREST), France   |
| 2010 - 2012 | Post-Doctorant, Centre de recherche en économie et statistique (CREST), France    |

## PUBLICATIONS

### Articles

- KLOPP, O., PANOV, M., SIGALLA, S. et TSYBAKOV, A. (2023). Assigning Topics to Documents by Successive Projections. *Annals of Statistics*, 51(5), pp. 1989-2014.

GAUCHER, S., KLOPP, O. et ROBIN, G. (2021). Outlier detection in networks with missing links. *Computational Statistics and Data Analysis*, 164, pp. 107308.

GAUCHER, S. et KLOPP, O. (2021). Maximum likelihood estimation of sparse networks with missing observations. *Journal of Statistical Planning and Inference*, 215, pp. 299-329.

ROBIN, G., KLOPP, O., JOSSE, J., MOULINES, E. et TIBSHIRANI, R. (2019). Main Effects and Interactions in Mixed and Incomplete Data Frames. *Journal of the American Statistical Association*, 115(531), pp. 1292-1303.

KLOPP, O., LU, Y., TSYBAKOV, A.B. et ZHOU, H.H. (2019). Structured Matrix Estimation and Completion. *Bernoulli: A Journal of Mathematical Statistics and Probability*, 4B(25), pp. 3883-3911.

KLOPP, O. et VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. *Probability Theory and Related Fields*, 174, pp. 1033-1090.

KLOPP, O., CARPENTIER, A., LÖFFLER, M. et NICKL, R. (2018). Adaptive confidence sets for matrix completion. *Bernoulli: A Journal of Mathematical Statistics and Probability*, 24(4A), pp. 2429-2460.

KLOPP, O. et GAIFFAS, S. (2017). High dimensional matrix estimation with unknown variance of the noise. *Statistica Sinica*, 27(1), pp. 115-145.

KLOPP, O., TSYBAKOV, A. et VERZELEN, N. (2017). Oracle inequalities for network models and sparse graphon estimation. *Annals of Statistics*, 45(1), pp. 316-354.

KLOPP, O., LOUNICI, K. et TSYBAKOV, A. (2017). Robust Matrix Completion. *Probability Theory and Related Fields*, 169(43862), pp. 523-564.

KLOPP, O., LAFOND, J., MOULINES, E. et SALMON, J. (2015). Adaptive Multinomial Matrix Completion. *The Electronic Journal of Statistics*, 9(2), pp. 2950-2975.

KLOPP, O. et TSYBAKOV, A. (2015). Estimation of matrices with row sparsity. *Problems of Information Transmission*, 51(4), pp. 335-348.

KLOPP, O. (2015). Matrix completion by singular value thresholding : sharp bounds. *The Electronic Journal of Statistics*, 9(2), pp. 2348-2369.

KLOPP, O. et PENSKY, M. (2015). Sparse high-dimensional varying coefficient model : non-asymptotic minimax study. *Annals of Statistics*, 43(3), pp. 1273-1299.

KLOPP, O. (2014). Noisy low-rank matrix completion with general sampling distribution. *Bernoulli: A Journal of Mathematical Statistics and Probability*, 20(1), pp. 282-303.

KLOPP, O. et PENSKY, M. (2013). Non-asymptotic approach to varying coefficient model. *The Electronic Journal of Statistics*, 7, pp. 454-479.

KLOPP, O. (2011). Rank penalized estimators for high-dimensional matrices. *The Electronic Journal of Statistics*, 5, pp. 1161-1183.

## Chapitres d'ouvrage

CARPENTIER, A., KLOPP, O. et LÖFFLER, M. (2019). Constructing Confidence Sets for the Matrix Completion Problem. Dans: *Nonparametric Statistics*. 1st ed. Springer, pp. 103-119.

## Actes d'une conférence

ROBIN, G., WAI, H.T., JOSSE, J., KLOPP, O. et MOULINES, A. (2018). Low-Rank Interactions and Sparse Additive Effects Model for Large Data Frames. Dans: *Advances in Neural Information Processing Systems 31 (NIPS 2018)*.

KLOPP, O., LAFOND, J., MOULINES, E. et SALMON, J. (2014). Probabilistic low-rank matrix completion on finite alphabets. Dans: *NIPS*. Montréal: Neural Information Processing Systems.

## Conférences

GAUCHER, S. et KLOPP, O. (2023). Optimality of Variational Inference for Stochastic Block Model. Dans: Workshop on Eco-Stat Asymptotics 2023 WESA2023. Verona.

ENIKEEVA, F. et KLOPP, O. (2023). Change Point Detection in Dynamic Networks. Dans: 2023 Change Point Workshop at Warwick. Warwick.

GAUCHER, S. et KLOPP, O. (2023). Optimality of Variational Inference for Stochastic Block Model. Dans: 12th Workshop on High Dimensional Data Analysis (HDDA-XII) 2023. Paris.

KLOPP, O. (2023). Denoising Over Network with Application to Discrete-time Epidemic Process. Dans: 2023 Graph Limits and Processes on Networks Reunion. Berkeley.

GAUCHER, S. et KLOPP, O. (2022). Optimality of Variational Inference for Stochastic Block Model. Dans: 2022 Graph Limits, Nonparametric Models, and Estimation. Berkeley.

KLOPP, O., PANOV, M., SIGILLA, S. et TSYBAKOV, A. (2022). Assigning Topics to Documents by Successive Projections. Dans: 2022 Institute of Mathematical Statistics (IMS) Annual Meeting. London.

GAUCHER, S., KLOPP, O. et ROBIN, G. (2022). Outlier Detection in Networks. Dans: 2022 International Symposium on Nonparametric Statistics (ISNPS). Paphos.

GAUCHER, S. et KLOPP, O. (2021). Optimality of variational inference for stochastic block model with missing links. Dans: 35th Conference on Neural Information Processing Systems (NeurIPS2021). Virtual.

KLOPP, O. (2020). Link Prediction in Sparse Graphon Model. Dans: 2020 EURANDOM Workshop: Graph Limits.

KLOPP, O. (2020). Robust network analysis. Dans: 13th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2020), Virtual Conference.

KLOPP, O. (2019). Matrix Completion: Old and New. Dans: 2019 Structural Inference in High-Dimensional Models 2.

KLOPP, O. (2019). Sparse Network Estimation. Dans: 2019 The Power of Graphs in Machine Learning and Sequential Decision-making.

KLOPP, O. (2019). Sparse Network Estimation. Dans: High dimensional probability and algorithms.

KLOPP, O. (2019). Modèles de réseaux parcimonieux. Dans: 2019 Colloquium de Montpellier.

KLOPP, O., TSYBAKOV, A. et VERZELEN, N. (2018). Network Models and Sparse Graphon Estimation. Dans: 14th Franco-Romanian Conference on Applied Mathematics.

KLOPP, O. et VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. Dans: 27th Nordic Conference in Mathematical Statistics (NORDSTAT) 2018.

KLOPP, O. et VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. Dans: Tercera jornada Franco-Chilena de Estadística.

KLOPP, O., LOUNICI, K., TSYBAKOV, A.B. et ALAYA, M.Z. (2018). Robust Matrix Completion/Collective Matrix Completion. Dans: 40th Conference on Stochastic Processes and their Applications (SPA 2018).

KLOPP, O., LU, Y., TSYBAKOV, A.B. et ZHOU, H.H. (2018). Structured Matrix Estimation and Completion. Dans: 4th Conference of the International Society for Nonparametric Statistics.

KLOPP, O., TSYBAKOV, A. et VERZELEN, N. (2018). Network models. Dans: Tercera jornada Franco-Chilena de Estadística. Valparaiso.

KLOPP, O., TSYBAKOV, A. et VERZELEN, N. (2018). Network models and sparse graphon estimation. Dans: NordStat 2018. Tartu.

KLOPP, O., LOUNICI, K., TSYBAKOV, A. et ALAYA, M. (2018). Variety and Veracity of the Data in Matrix Completion. Dans: The 40th Conference on Stochastic Processes and their Applications. Gothenburg.

KLOPP, O. et VERZELEN, N. (2017). Optimal Graphon Estimation in Cut Distance. Dans: Workshop on Community Detection and Network Reconstruction 2017.

KLOPP, O. (2017). Optimal graphon estimation in cut distance. Dans: The Foundations in Computational Mathematics Conference. Barcelona.

KLOPP, O. (2017). Optimal graphon estimation in cut distance. Dans: Statistics meets Stochastics 2. Moscow.

KLOPP, O. (2016). Confidence sets for matrix completion. Dans: Advances in nonparametric and high-dimensional Statistic. Frejus.

KLOPP, O. (2016). Matrix Completion. Dans: Multimedia Inpainting Workshop. Rennes.

KLOPP, O. (2016). Network models and sparse graphon estimation. Dans: NIPS workshop. Barcelona.

KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. Dans: Joint Statistical Meeting. Chicago.

KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. Dans: 3rd ISNPS conference. Avignon.

KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. Dans: Modern problems of stochastic analysis and statistics. Moscow.

KLOPP, O. (2015). 1-bit Matrix Completion. Dans: Indian Russian Conference in Statistics and Probability. Delhi.

KLOPP, O. (2015). Oracle inequalities for network models and sparse graphon estimation. Dans: Meeting in Mathematical Statistics. Frejus.

KLOPP, O. (2015). Oracle inequalities for network models and sparse graphon estimation. Dans: 2nd Heidelberg - Mannheim Stochastic Colloquium.

KLOPP, O. (2015). Robust Matrix Completion. Dans: ISNPS Biosciences, Medicine, and novel Non-parametric Methods. Graz.

KLOPP, O. (2015). Robust Matrix Completion. Dans: The First International Conference on missing values MissData. Rennes.

## **AUTRES ACTIVITES DE RECHERCHE**

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### **Membre d'un comité de lecture**

2016 - 2022 Bernoulli: A Journal of Mathematical Statistics and Probability

### **Organisation d'une conférence**

2017 Co-organisatrice du Working Group on Risk (Groupe de Travail sur le Risque), ESSEC Business School, France

## **ENSEIGNEMENT**

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2020 Statistical Inference, ESSEC Business School, France

2019 Modelisation Statistiques, ESSEC Business School, France

2017 Big Data Analytics, ESSEC Business School, France

2016 Mini-cours: "Analyse des réseaux statistiques", Higher School of Economics (HSE),