

# Olga KLOPP

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## RESEARCH INTERESTS

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Statistical Data Analysis

## EDUCATION

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|------|---|
| 2016 | HDR, Université Paris X Nanterre, France  |
| 2004 | Ph.D. in Mathematics, Université Nationale Autonome de Mexico, Mexico                         |
| 1997 | Master in Mathematics and Applied Mathematics, Université d'État Lomonossov de Moscou, Russia |

## EMPLOYMENT

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### Full-time academic positions

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| 2023 - Present | Professor, ESSEC Business School, France                             |
| 2017 - 2023    | Associate Professor, ESSEC Business School, France                   |
| 2012 - 2017    | Assistant professor, Université Paris X Nanterre, France             |
| 2004 - 2008    | Assistant professor, Université Nationale Autonome de Mexico, Mexico |

### Other affiliations and appointments

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|-------------|--|
| 2018 - 2024 | Pedagogical Head DD CentraleSupélec et ENSAE, ESSEC Business School, France          |
| 2018 - 2023 | Scientific Track Head, ESSEC Business School, France                                 |
| 2017 - 2017 | Member of CNRS, Center for Research in Economics and Statistics (CREST), France      |
| 2010 - 2012 | Postdoctoral fellow, Center for Research in Economics and Statistics (CREST), France |

## PUBLICATIONS

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### Journal Articles

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

- GAUCHER, S., KLOPP, O. and ROBIN, G. (2021). Outlier detection in networks with missing links. *Computational Statistics and Data Analysis*, 164, pp. 107308.
- GAUCHER, S. and 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. and 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. and ZHOU, H.H. (2019). Structured Matrix Estimation and Completion. *Bernoulli: A Journal of Mathematical Statistics and Probability*, 4B(25), pp. 3883-3911.
- KLOPP, O. and VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. *Probability Theory and Related Fields*, 174, pp. 1033-1090.
- KLOPP, O., CARPENTIER, A., LÖFFLER, M. and NICKL, R. (2018). Adaptive confidence sets for matrix completion. *Bernoulli: A Journal of Mathematical Statistics and Probability*, 24(4A), pp. 2429-2460.
- KLOPP, O. and GAIFFAS, S. (2017). High dimensional matrix estimation with unknown variance of the noise. *Statistica Sinica*, 27(1), pp. 115-145.
- KLOPP, O., TSYBAKOV, A. and VERZELEN, N. (2017). Oracle inequalities for network models and sparse graphon estimation. *Annals of Statistics*, 45(1), pp. 316-354.
- KLOPP, O., LOUNICI, K. and TSYBAKOV, A. (2017). Robust Matrix Completion. *Probability Theory and Related Fields*, 169(43862), pp. 523-564.
- KLOPP, O., LAFOND, J., MOULINES, E. and SALMON, J. (2015). Adaptive Multinomial Matrix Completion. *The Electronic Journal of Statistics*, 9(2), pp. 2950-2975.
- KLOPP, O. and 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. and 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. and 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.

### Book chapters

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

### Conference proceedings

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

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

## Conferences

KLOPP, O. (2024). Denoising over network with applications to partially observed epidemics. In: *2024 Statistical Machine Learning for High Dimensional Data*. Singapore.

KLOPP, O. (2024). Low-rank density estimation. In: *2024 Workshop on Heterogeneous and Distributed Data*. Warwick.

KLOPP, O., DONNAT, C. and VERZELEN, N. (2024). Signal denoising on the graph with applications to the study of the epidemic spread. In: *2024 International Symposium on Nonparametric Statistics*. Braga.

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

ENIKEEVA, F. and KLOPP, O. (2023). Change Point Detection in Dynamic Networks. In: *2023 Change Point Workshop at Warwick*. Warwick.

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

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

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

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

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

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

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

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

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

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

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

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

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

- KLOPP, O. and VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. In: 27th Nordic Conference in Mathematical Statistics (NORDSTAT) 2018.
- KLOPP, O. and VERZELEN, N. (2018). Optimal Graphon Estimation in Cut Distance. In: Tercera jornada Franco-Chilena de Estadística.
- KLOPP, O., LOUNICI, K., TSYBAKOV, A.B. and ALAYA, M.Z. (2018). Robust Matrix Completion/Collective Matrix Completion. In: 40th Conference on Stochastic Processes and their Applications (SPA 2018).
- KLOPP, O., LU, Y., TSYBAKOV, A.B. and ZHOU, H.H. (2018). Structured Matrix Estimation and Completion. In: 4th Conference of the International Society for Nonparametric Statistics.
- KLOPP, O., TSYBAKOV, A. and VERZELEN, N. (2018). Network models. In: Tercera jornada Franco-Chilena de Estadística. Valparaiso.
- KLOPP, O., TSYBAKOV, A. and VERZELEN, N. (2018). Network models and sparse graphon estimation. In: NordStat 2018. Tartu.
- KLOPP, O., LOUNICI, K., TSYBAKOV, A. and ALAYA, M. (2018). Variety and Veracity of the Data in Matrix Completion. In: The 40th Conference on Stochastic Processes and their Applications. Gothenburg.
- KLOPP, O. and VERZELEN, N. (2017). Optimal Graphon Estimation in Cut Distance. In: Workshop on Community Detection and Network Reconstruction 2017.
- KLOPP, O. (2017). Optimal graphon estimation in cut distance. In: The Foundations in Computational Mathematics Conference. Barcelona.
- KLOPP, O. (2017). Optimal graphon estimation in cut distance. In: Statistics meets Stochastics 2. Moscow.
- KLOPP, O. (2016). Confidence sets for matrix completion. In: Advances in nonparametric and high-dimensional Statistic. Frejus.
- KLOPP, O. (2016). Matrix Completion. In: Multimedia Inpainting Workshop. Rennes.
- KLOPP, O. (2016). Network models and sparse graphon estimation. In: NIPS workshop. Barcelona.
- KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. In: Joint Statistical Meeting. Chicago.
- KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. In: 3rd ISNPS conference. Avignon.
- KLOPP, O. (2016). Oracle inequalities for network models and sparse graphon estimation. In: Modern problems of stochastic analysis and statistics. Moscow.
- KLOPP, O. (2015). 1-bit Matrix Completion. In: Indian Russian Conference in Statistics and Probability. Delhi.
- KLOPP, O. (2015). Oracle inequalities for network models and sparse graphon estimation. In: Meeting in Mathematical Statistics. Frejus.
- KLOPP, O. (2015). Oracle inequalities for network models and sparse graphon estimation. In: 2nd Heidelberg - Mannheim Stochastic Colloquium.
- KLOPP, O. (2015). Robust Matrix Completion. In: ISNPS Biosciences, Medicine, and novel Non-parametric Methods. Graz.

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

## OTHER RESEARCH ACTIVITIES

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### Editorial Board Membership

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

### Organisation of a conference

2017 Co-organizer of Working Group on Risk, ESSEC Business School, France

## TEACHING EXPERIENCE

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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-course: "Analyse des réseaux statistiques", Higher School of Economics (HSE),