



## Giulia Cervia

KTH – Royal Institute of Technology  
Malvinas väg 10, 11428 Stockholm, Sweden  
cervia@kth.se  
<https://people.kth.se/~cervia/index2020.html>

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### EDUCATION

- Oct 2015 - Nov 2018    **Ph.D. in Information Theory**  
Laboratoire ETIS – Université Paris Seine, Université Cergy-Pontoise, ENSEA, CNRS  
Advisor: *Inbar Fijalkow*  
Co-supervisors: *Laura Luzzi* and *Maël Le Treust*  
Title: “*Coordination of autonomous devices over noisy channels: capacity results and coding techniques*”  
<http://www.theses.fr/2018CERG0960>  
Date of defense: **30 November 2018**  
**Committee:**  
- Referee: *Michèle Wigger*, Professor at Télécom ParisTech (CNU 61)  
- Referee: *Albert Guillén i Fàbregas*, Professor at Universitat Pompeu Fabra  
- President of the committee: *Pierre Duhamel*, CNRS Senior Scientist (DR CNRS) at L2S (CoNRS 7)  
- Examiner: *Jean-Claude Belfiore*, Professor at Télécom ParisTech (CNU 61)  
- Advisor: *Inbar Fijalkow*, Professor at ENSEA (CNU 61)  
- Co-supervisor: *Laura Luzzi*, Assistant Professor (Maître de conférences) at ENSEA (CNU 61)  
- Co-supervisor: *Maël Le Treust*, CNRS Researcher (CR CNRS) at ETIS (CNU 61)
- Oct 2014    **Master degree in Mathematics**  
Università di Pisa – Pisa, Italy  
Co-supervisors: *Paolo Acquistapace* – Dipartimento di Matematica, Università di Pisa  
*Marco Luise* – Dipartimento di Ingegneria dell’informazione, Università di Pisa  
*Salvatore Corvo* – Thales Alenia Space  
Title: “*Polarization of DMCs and Polar Codes*”  
<https://etd.adm.unipi.it/t/etd-09302014-113534/>

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### WORK EXPERIENCE

- Jan 2019 - present    **PostDoc in Information Theory**  
Information Science and Engineering Division, School of Electrical Engineering and Computer Science  
*KTH Royal Institute of Technology* – Stockholm, Sweden  
Supervisors: *Mikael Skoglund* and *Tobias Oechtering*
- Aug 2019    **Head of staff**  
**Creator of printed material for the conference – Conference Booklet**  
<https://people.kth.se/~cervia/ITWbooklet.pdf>  
*IEEE Information Theory Workshop (ITW)* – Visby, Gotland, Sweden
- Oct 2018 - Dec 2018    **ATER – Temporary Research and Teaching Attaché**  
ENSEA – Graduate School in Electrical Engineering, Computer Science and Communications Networks  
6 avenue du Ponceau, 95014 Cergy-Pontoise, France
- Sep 2017 - Aug 2018  
Sep 2016 - Aug 2017    **Teaching Assistant** at ENSEA
- Dec 2014 - Aug 2014    **Software developer and configurator**  
Insurance Online SPA, Via Umberto Forti, 6, 56121 Montacchiello PI, Italy
- Sep 2014 - Oct 2014    **Final year of master stage**  
Thales Alenia Space, via Saccomuro 24, Roma, Italy  
“*Polarization of DMCs and Polar Codes*”  
Internship supervisor: *Salvatore Corvo*

## QUALIFICATIONS AND AWARDS

- **Prix des Femmes et des Sciences 2019** (Women and Science Award 2019) of Université Paris Seine
  - **Qualification Maître de Conférences – Section 61 CNU**  
Section: *Génie informatique, automatique et traitement du signal*, Conseil national des universités  
French national professional qualification to become Assistant Professor in Computer Science, automatics and signal processing
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## PRESENTATIONS AND SEMINARS

- Poster Session “Coordination in decentralized networks, an information theoretic approach to cooperation”, in **Digitalize in Stockholm 2019**, November 2019, Stockholm (Sweden)
  - Seminar “Polar Codes for Coordination”, presented at **Università degli Studi di Brescia**, November 2019, Brescia (Italy)
  - Seminar “Fixed-Length Strong Coordination” [C11], presented at **IEEE Information Theory Workshop (ITW)**, August 2019, Visby, Gotland (Sweden)
  - Seminar “Coordination of autonomous devices over noisy channels: capacity results and coding techniques”, presented at **Universitat Pompeu Fabra**, May 2019, Barcelona (Spain)
  - Seminar “Strong coordination over noisy channels with strictly causal encoding” [C12], presented at **Allerton Conference on Communication, Control and Computing**, October 2018, Monticello, Illinois (USA)
  - Seminar “Strong coordination of signals and actions over noisy channels with two-sided state information” [A1SUB], presented:
    - August 2018, **KTH**, Stockholm (Sweden)
    - July 2018, **INRIA**, Lyon (France)
    - February 2018, **Imperial College**, London (UK)
    - February 2018, **King’s College**, London (UK)
  - Seminar “Strong coordination of signals and actions over noisy channels” [C13], presented at **IEEE International Symposium on Information Theory (ISIT)**, June 2017, Aachen (Germany)
  - Seminar “Polar codes for empirical coordination over noisy channels with strictly causal encoding” [CN1], presented at **Colloque GRETSI**, September 2017, Juan-les-Pins (France)
  - Seminar “Polar coding for empirical coordination of signals and actions over noisy channels” [C14], presented at **IEEE Information Theory Workshop (ITW)**, September 2016, Cambridge (UK)
  - Poster Session “Polar coding for empirical coordination of signals and actions over noisy channels” [C14], in **European School of Information Theory (ESIT)**, April 2016, **CHALMERS**, Gothenburg (Sweden)
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## SCIENTIFIC VISITS

- Università degli Studi di Brescia, Brescia (Italy), visit to **Prof. Marco Dalai** (November 2019)
  - Universitat Pompeu Fabra, Barcelona (Spain), visit to **Prof. Albert Guillén i Fàbregas** (May 2019)
  - GeorgiaTech, Atlanta (USA), visit to **Prof. Matthieu Bloch** (September 2017)
  - Université de Strasbourg, UFR de Mathématique et d’Informatique, Strasbourg (France), Master 1, **Erasmus program**, academic year 2011-2012
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## REVIEWER

- Reviewer for the journals “IEEE Communications Letters”, “IEEE Transactions on Communications”, and “IEEE Transactions on Information Theory” and for the conferences “IEEE Wireless Communications and Networking Conference”, “IEEE International Symposium on Information Theory”, and “IEEE Information Theory Workshop”

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## PUBLICATIONS

### Journal papers

- [A1] G. Cervia, L. Luzzi, M. Le Treust and M. R. Bloch, "Strong coordination of signals and actions over noisy channels with two-sided state information", accepted and to appear in *IEEE Transactions on Information Theory*, DOI: [10.1109/TIT.2020.2984345](https://doi.org/10.1109/TIT.2020.2984345), ([arxiv.org/abs/1801.10543v2](https://arxiv.org/abs/1801.10543v2))

### International conferences with proceedings

- [CI1] G. Cervia, T. Oechtering and M. Skoglund, "Remote Joint Strong Coordination and Reliable Communication", accepted at *IEEE International Symposium on Information Theory (ISIT)*, 2020, available online at <https://people.kth.se/~cervia/RCISIT2020long.pdf>
- [CI2] G. Cervia, T. Oechtering and M. Skoglund, "Fixed-length Strong Coordination", presented at *IEEE Information Theory Workshop (ITW)*, August 2019, Visby, Gotland (Sweden)
- [CI3] G. Cervia, L. Luzzi, M. Le Treust and M. R. Bloch, "Strong coordination over noisy channels with strictly causal encoding", presented at *Allerton Conference on Communication, Control and Computing*, October 2018, Monticello, Illinois (USA)
- [CI4] G. Cervia, L. Luzzi, M. Le Treust and M. R. Bloch, "Strong coordination of signals and actions over noisy channels", presented at *IEEE International Symposium on Information Theory (ISIT)*, pages 2835 - 2839, DOI: [10.1109/ISIT.2017.8007047](https://doi.org/10.1109/ISIT.2017.8007047), June 2017, Aachen (Germany),
- [CI5] G. Cervia, L. Luzzi, M. R. Bloch and M. Le Treust, "Polar coding for empirical coordination of signals and actions over noisy channels", presented at *IEEE Information Theory Workshop (ITW)*, pages: 81 - 85, DOI: [10.1109/ITW.2016.7606800](https://doi.org/10.1109/ITW.2016.7606800), September 2016, Cambridge (UK)

### National conferences with proceedings

- [CN1] G. Cervia, L. Luzzi, M. Le Treust and M. R. Bloch, "Polar codes for empirical coordination over noisy channels with strictly causal encoding", presented at *Colloque GRETSI*, September 2017, Juan-les-Pins (France)

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### COMPUTER SKILLS

- Operating Systems : Linux/Unix, Windows, iOS
- Programming Skills : **Matlab**, **Mathematica** and **C**
- Software : **LaTeX**, Office, **Inkscape**, Gimp

### LANGUAGE SKILLS

- **Italian** (native)
- **English** (proficient)
- **French** (fluent)

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## TEACHING AND TUTORING EXPERIENCE

- Oct 2019 - present **Co-supervision of PhD Student Sara Saeidian**  
Information Science and Engineering Division  
School of Electrical Engineering and Computer Science – **KTH**  
*Percentage of supervision:* Giulia Cervia 40%  
Tobias Oechtering 40%  
Mikael Skoglund 20%
- Oct 2016 - dec 2018 **ENSEA** (Graduate School in Electrical Engineering, Computer Science and Communications Networks)

<b>2018-2019</b>	Statistical Signal Processing	Exercise sessions	24 hours
		Laboratories	24 hours
			Total: 48 hours
<b>2017-2018</b>	Statistics and Numerical Methods	Exercise sessions	16 hours
		Laboratories	16 hours
	Statistical Signal Processing	Exercise sessions	4 hours
		Laboratories	16 hours
	Information Theory	Exercise sessions	10 hours
	Mini-project Networks and Telecommunications Title: "Polar Codes" Student: Amar Mamodaly	Co-supervision	2 hours
			Total: 64 hours
<b>2016-2017</b>	Probability and Statistics	Exercise sessions	14 hours
		Laboratories	24 hours
	Statistical Signal Processing	Exercise sessions	2 hours
			Total: 64 hours

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## REFERENCES

- **Dr. Laura Luzzi, Dr. Maël Le Treust, Prof. Inbar Fijalkow**  
ETIS, UMR 8051, CY Université, ENSEA, CNRS, Cergy-Pontoise  
6 avenue du Ponceau, 95000 Cergy, France  
email: {laura.luzzi, mael.le-treust, inbar.fijalkow}@ensea.fr  
phone: +33 1 30 73 62 96, +33 1 30 73 62 64, +33 1 30 73 66 10
- **Prof. Mikael Skoglund, Prof. Tobias Oechtering**  
Information Science and Engineering - School of Electrical Engineering and Computer Science  
KTH Royal Institute of Technology  
100 44 Stockholm, Sweden  
email: {skoglung, oech}@kth.se  
phone: +46 8 790 8430, +46 8 790 84 62