# Charles Bertucci

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| *Born* | 18th of March 1993 in Marseille, France |
| *Address* | CMAP, École Polytechnique, |
| | Route de Saclay, 91128, Palaiseau France |
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## Education

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| 2016–2018 | **Ph. D. in Applied Mathematics**, *Université Paris-Dauphine*, Paris. |
| | Title : Contributions à la théorie des jeux à champ moyen ; Advisor : Pierre-Louis Lions ; Defended on the 11th of December 2018 |
| 2015–2016 | **Master 2**, *Université Pierre et Marie Curie*, Paris, *Mention Très bien*. |
| 2012–2016 | **Diplôme d'ingénieur**, *École Polytechnique*, Palaiseau. |
| 2010–2012 | **Classes préparatoires**, *Lycée Thiers*, Marseille. |

## Working experience

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| 2020–present | **Chargé d'enseignement à temps partiel (Part time assistant professor)**, *École Polytechnique*, Palaiseau. |
| 2019–present | **CNRS researcher**, *École Polytechnique*, Palaiseau. |
| 2016–2019 | **Doctoral position**, *Université Paris-Dauphine*, Paris. |
| | With teaching duty of 64h per year |
| 2016–present | **Scientific adviser**, Paris. |
| | Missions with Kayrros and Huaweï |

## Research interests

- Partial Differential Equations
- Optimization
- Game theory
- Probabilities
- Numerical methods
- Mean Field Games
- Systems of conservation laws
- Obstacle problems

## Scientific papers

- C. Bertucci : Optimal stopping in mean field games, an obstacle problem approach ; *Journal de Mathématiques Pures et Appliquées*; 2018 ; Volume 120 ; p 165-194.

- C. Bertucci : Fokker-Planck equations of jumping particles and mean field games of impulse control; to appear in Annales de l'Institut Henri Poincaré C, Analyse non linéaire ; 2020
- C. Bertucci, J.-M. Lasry and P.-L. Lions : Some remarks on mean field games; Communications in Partial Differential Equations, 2019, vol. 44, no 3, p. 205-227.
- C. Bertucci : A remark on Uzawa's algorithm and an application to mean field games systems; ESAIM: Mathematical Modelling and Numerical Analysis, 2020, vol. 54, no 3, p. 1053-1071.
- C. Bertucci, J.-M. Lasry and P.-L. Lions : Strategic advantages in mean field games with a major player, 2020, to appear in Comptes Rendus Mathématique.
- C. Bertucci, J.-M. Lasry and P.-L. Lions : Master equation for the finite state space planning problem. arXiv preprint arXiv:2002.09330, 2020.
- Y. Achdou, C. Bertucci, J.-M. Lasry, P.-L. Lions, A. Rostand and J. Scheinkman : A class of short-term models for the oil industry addressing speculative storage. arXiv preprint arXiv:2003.11790, 2020.
- C. Bertucci, L. Bertucci, J.-M. Lasry and P.-L. Lions : Mean Field Game Approach to Bitcoin Mining. arXiv preprint arXiv:2004.08167, 2020.
- C. Bertucci : Monotone solutions for mean field games master equations: finite state space and optimal stopping. arXiv preprint arXiv:2007.11854.

### Conference papers

- C. Bertucci, S. Vassilaras, J.-M. Lasry, G. Paschos, M. Debbah and P.-L. Lions : Transmit strategies for massive machine-type communications based on mean field games ; Proceedings of the International Symposium on Wireless Communication System (ISWCS) ; 2018

## Visits

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| June 2019 | **Università di Roma la Sapienza**, *Invited by Fabio Camilli*. |
| October 2017 | **Università di Roma la Sapienza**, *Invited by Italo Capuzzo-Dolcetta*. |
| March-July 2015 | **Columbia Univeristy**, *Internship supervised by Guillaume Bal*, Title : Polynomial chaos expansions and optimal transport. |

## Selected Talks

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| Feb. 2020 | **Mean Field Games : Recent Progress**, *University of Chicago, Chicago*. |
| Sept. 2019 | **MFG and related topics 5**, *Levico Terme, Trento (Italy)*. |
| April 2019 | **Workshop Mean field games and applications**, *ICMS, Edimburgh*. |
| March 2019 | **MAD-Stat Seminar**, *TSE, Toulouse*. |
| March 2019 | **Séminaire du CMAP**, *École Polytechnique, Palaiseau*. |
| Jan. 2019 | **Séminaire parisien de théorie des jeux**, *IHP, Paris*. |
| Dec. 2018 | **Seminar of the statistical department**, *LSE, London*. |
| Oct. 2018 | **Séminaire Probabilités statistiques et contrôle**, *CMAP-ENSAE-ENSTA, Palaiseau*. |
| March 2018 | **Workshop of the Mean field games ANR project**, *Tours*. |
| Nov. 2017 | **PGMO days**, *EDF labs, Saclay*. |
| Oct. 2017 | **Meeting of the "Groupe de recherche en théorie des jeux"**, *Fréjus*. |
| Oct. 2017 | **Seminario di Analisi Matematica**, *Università di Roma la Sapienza, Roma*. |

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| Sept. 2017 | **Groupe de travail CalVa**, *Uniservité Paris-sud, Orsay.* |
| June 2017 | **8ème Biennale de la SMAI**, *Ronce-les-Bains.* |
| Jan. 2017 | **Séminaire de Mathématiques appliquées**, *Collège de France, Paris.* |
| Nov. 2016 | **PDE models for multi-agent phenomena**, *Indam, Roma.* |
| Nov. 2016 | **PGMO days**, *EDF labs, Saclay.* |

### ▬▬▬ Others

PGMO thesis prize in 2019 ; 1st prize for a thesis in mathematics from Chancellerie des Universités de Paris in 2019 ; Thesis prize from Fondation Dauphine in 2019.