Cédric **Rommel**

PHD CANDIDATE IN STATISTICAL LEARNING AND OPTIMIZATION

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Research Interests

Supervised Learning:	Functional data, Multi-task/Multi-output learning, feature selection, kernel methods.
Unsupervised Learning:	Density estimation, Reinforcement Learning.
Control theory:	Optimal control, HJB, Dynamic Programming, Dynamical systems identification.
Optimization:	First order methods, nonsmooth functions, nonconvex optimization, alternating minimization.
Fields of application:	Trajectory Optimization, System Identification

Experience

CMAP Ecole Polytechnique | INRIA Saclay | Safety Line
Paris, France

PHD CANDIDATE IN STATISTICAL LEARNING AND OPTIMIZATION — *Nov. 2015 - Today*

- Supervised by Frédéric Bonnans and Pierre Martion.
- Designed state-of-the-art statistical models for aircraft dynamics identification.
- Implemented designed models into python packages for internal use at Safety Line.
- Designed efficient density estimation techniques for functional data.
- Applied techniques to aircraft trajectories discrimination.

French Space Agency (CNES)
Paris, France

MASTER THESIS INTERNSHIP IN LAUNCHERS TRAJECTORY OPTIMIZATION — *Apr. - Aug. 2015*

- Designed a trajectory optimization technique tailored for a reusable rocket project.
- Used the results to assess the feasibility of the project.

Systems & Control Center, MINES ParisTech
Paris, France

RESEARCH INTERNSHIP IN SIGNAL PROCESSING AND STATISTICAL LEARNING — *Sep. 2014 - Apr. 2015*

- Designed algorithm capable of inferring the orientation of a ballistic missile from its magnetometer data.
- Used efficient local Fourier based methods from signal processing and functional data analysis.
- Work performed under Lionel Magnis supervision during his PhD Thesis.
- Implementation in Matlab.

AIRBUS Operations
Madrid, Spain

R&D LEAN MANAGEMENT INTERNSHIP — *Mar. - Jul. 2014*

- Supported implementation and deployment of Lean tools within Engineering departments for the A380 project.

AIRBUS Defence&Space
Friedrichshafen, Germany

THERMAL ANALYST INTERNSHIP — *Jun. - Dec 2013*

- Implementation in VBA of a pipeline connecting new satellite test monitoring system with thermal analysis tool for the Sentinal-2 mission.

MINES ParisTech
Paris, France

CUBESAT PROJECT LEADER — *Sep. 2012 - Jun. 2013*

- Designed, assembled and tested part of nanosatellite in framework of QB50 European program.
- Led a 15-student team.
- Satellite was launched into space on March 2017.

VINCI - Campenon Bernard Construction
Paris, France

BLUE COLLAR INTERNSHIP — *Feb. 2012*

Education

MINES ParisTech
Paris, France

MASTER OF SCIENCE AND EXECUTIVE ENGINEERING — *Sep. 2011 - Jun. 2015*

- Main courses: Probability Theory, Data Analysis, Statistics, Control Theory, Optimization, Signal Processing, Operations Research.

Lycée HOCHE   *Versailles, France*

Preparatory School   *Sep. 2009 - Sep. 2011*

- Special preparatory classes leading to the competitive examination for the top series of French engineering schools.
- Ranked 40th out of 3502 competitors.

Lycée Pasteur   *Sao Paulo, Brazil*

French Scientific Baccalaureate with 1st class honors   *Nov. 2008*

- Major : Mathematics and Physics.

Skills

Programming	Python (*scikit-learn, pandas, numpy, scipy, seaborn, plotly, ...*), C/C++, JAVA, VBA, Matlab, UML, Git, LaTeX
Languages	**Mother tongues:** Portuguese, French | **Fluent:** English, Spanish | **Notions:** German, Mandarin

Publications and pre-prints

Quantifying the closeness to a set of random curves via the Mean Marginal Likelihood

C. Rommel, J.F. Bonnans, B. Gregorutti, P. Martinon   *Jan. 2018*

Block sparse linear models for learning structured dynamical systems in aeronautics

C. Rommel, J.F. Bonnans, B. Gregorutti, P. Martinon   *Nov. 2017*

Aircraft dynamics identification for optimal control   *Milan, Italy*

C. Rommel, J.F. Bonnans, B. Gregorutti, P. Martinon   *Jul. 2017*

European Conference for Aeronautics and Space Science

Research Posters

Junior Conference on Data Science and Engineering | Paris-Saclay University   *Paris, France*

Aircraft Dynamics Identification   *Sep. 2017*

Data Science Summer School | Ecole Polytechnique   *Paris, France*

Aircraft Dynamics Identification   *Sep. 2017*

Mathématiques, Oxygène du numérique | Institut Henri Poincaré   *Paris, France*

Exploration de données pour l'optimisation de trajectoires aériennes   *Oct. 2016*

- *Awarded best poster price from Fields medal laureate Cédric Villani*

Workshop Transition Energetique | EDF Lab, Paris-Saclay University   *Paris, France*

Exploration de données aéronautiques au service de la consommation de carburan.   *Oct. 2016*