WAPE Master's program:

Water, Air, Pollution and Energy

at local and regional scales

Academic year 2019-2020

Program Directors

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http://www.coriolis.polytechnique.fr/MASTERS/WAPE.html

Presentation

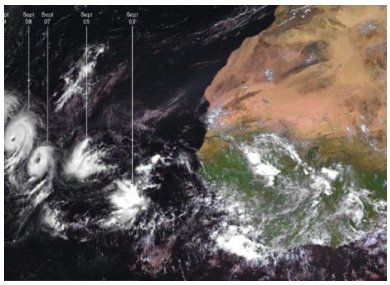
- Second-year specialty program (M2) in advanced mechanics and physics of the environment
- International program (courses in English) open to European and International students
- Lectures take place on the Palaiseau Campus or on the Jussieu Campus inside Paris (UPMC)
- **Possibility for selected students to spend the fall semester at Columbia University, NY, USA**
- **Possibility of a granted PhD track within the "Ecole Polytechnique PhD program"**
- WAPE is based on the research and tutorial resources of École Polytechnique and ENSTA ParisTech, and of the Institut Pierre Simon Laplace (IPSL)

Expected benefits

• Sound understanding of environmental processes in the atmosphere and the ocean

• Design and development of efficient numerical models for environmental engineering.

• Ability to select pertinent parameters and measurement techniques that are relevant to impact studies or societal demand.



Employment opportunities

• Engineer career in small or big companies at the Master or PhD level.

• Further graduate studies towards the completion of a PhD degree leading to a research career.

• Public administrations or environmental agencies.

Course's topics

Core and elective courses *visit the web site for a complete list of courses*	
Fundamentals and general circulations	Atmospheric circulation, Ocean dynamics Energy balance and radiative processes
Regional dynamics and meso-scale processes	Regional meteorology, Boundary layer processes Clouds and precipitations, Pollution and transport Continental biosphere Coastal hydrodynamics, Sea state and coastal geomorphology Ocean Biogeochemical Dynamics & others
Mathematical tools	Numerical modelling, Data treatment, Data assimilation
In depth courses	Hydrology and water resources, Hydrodynamics and environment Turbulence and meso-scale dynamics, Mechanics for wind energy, Greenhouse gases (GHG) challenges and observations, Hydro, wind and marine resources for renewable energy & others
Management and Economics	Energy economics, Valuing and Managing Natural Resources & others

WAPE is an international track of the Master « Sciences de la Terre et des Planètes, Environnement (STePE) »

WAPE shares lectures with the Master « Météorologie, Océanographie, Climat et Ingénierie pour les Observations Spatiales (MOCIS) » organised by