

FINAL ABSTRACT OF THE REPORT ON THE RESEARCH UNIT:

The Hydrology Meteorology & Complexity
Laboratory
(HM&Co)

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

École des Ponts ParisTech (ENPC)

EVALUATION CAMPAIGN 2018-2019
GROUP E



In the name of Hcéres¹:

Michel Cosnard, President

In the name of the experts committee²:

Pierre Ribstein, Chairman of the
committee

Under the decree No.2014-1365 dated 14 November 2014,

¹ The president of Hcéres "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5);

² The evaluation reports "are signed by the chairman of the experts committee". (Article 11, paragraph 2).

The table in this document was filled with data provided by laboratories and supervising bodies in the unit's application and in the Excel files "Données du contrat en cours" and "Données du prochain contrat".

UNIT PRESENTATION

Unit name:	The Hydrology Meteorology & Complexity Laboratory
Unit acronym:	HM&Co
Requested label:	UR
Application type:	Restructuration
Current number:	
Head of the unit (2018-2019):	Ms Ioulia TCHIGUIRINSKAIA
Project leader (2020-2024):	Ms Ioulia TCHIGUIRINSKAIA
Number of teams and/or themes:	1

EXPERTS COMMITTEE MEMBERS

Chair:	Mr. Pierre RIBSTEIN, Sorbonne University
Experts:	Mr. Jean-Dominique CREUTIN (Grenoble University) Mr. Andras SZOLLOSI-NAGY (IASK Hungary)

HCÉRES REPRESENTATIVE

Mr. Christian SUE

REPRESENTATIVE OF SUPERVISING INSTITUTIONS AND BODIES

Ms. Françoise PRÊTEUX (ENPC)

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The research unit "Hydrometeorology and complexity" (HM&Co) was officially created on January 1 2017 by the École Nationale des Ponts et Chaussées (ENPC). The research topic is multi-scale variability of water dynamics in the city. This topic has been developed at the ENPC since 2003. The HM&Co unit is the result of an eponymous research group that has belonged to the LEESU "Laboratoire Eau, Environnement et Systèmes Urbains" since 2010. The office is located in Champs-sur-Marne on the site of Cité Descartes, in the Vicat wing of the Carnot building.

MANAGEMENT TEAM

Director: Ms Ioulia TCHIGUIRINSKAIA

HCÉRES NOMENCLATURE

ST3 Sciences de la terre et de l'univers

SCIENTIFIC DOMAIN

The central theme of HM&Co focuses on multi-scale variability in meteorology and hydrology in urban environments. Innovative approaches are proposed in terms of observations, advanced methodology, digital platform, and knowledge transfer. Urban-specific modeling tools are developed. Water in the city is seen as a resource but also as a risk, with the aim of increasing the resilience of the city to extreme events. Blue and Green Infrastructures (IBV) are also investigated.

UNIT WORKFORCE

	Unit workforce	
	HM&Co	
Active staff	Number 30/06/2018	Number 01/01/2020
Full professors and similar positions	0	0
Assistant professors and similar positions	0	0
Full time research directors (Directeurs de recherche) and similar positions	2	2
Full time research associates (Chargés de recherche) and similar positions	1	2
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	0
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	1	2
Permanent staff	4	6
Non-permanent professors and associate professors, including emeritus	4	
Non-permanent full time scientists, including emeritus, post-docs	11	
PhD Students	9	
Non-permanent supporting personnel	1	
Non-permanent staff	16	
Total	20	6

GLOBAL ASSESSMENT OF THE UNIT

HM&Co's research focuses on urban hydrology with a strong emphasis on multi-scale variability and especially that of rainfall. The works are supported by the Chair "Hydrology for a resilient city" endowed by Veolia and complemented by several European, National and International projects. The scientific production of HM&Co is very good. The international scientific influence is important as evidenced by international prizes, visiting senior scientists, active participation in scientific conferences and meeting organization.

The unit is structured around high-level equipment such as X-band Polarimetric Radar, Optical Disdrometers, and Multi-Hydro modeling platform. Innovative methodological developments focus on nonlinear processes and multifractal approaches.

HM&Co is a very small research unit with only 3 permanent researchers over the evaluation period to whom we must add numerous PhD students and several visiting foreign researchers, often for a significant period of several months. The unit size is the main weakness of HM&Co. There is a too few technical staff to lead developments with the available equipment. The very small size of the unit with too few permanent researchers hardly allows them to organize as a project team. Sustainable collaborations must be put in place to compensate for the low number of unit members.

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2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

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