



## Gabriele Coccia

Date of birth: 10/01/1983 | Nationality: Italian | ██████████ |

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### WORK EXPERIENCE

31/03/2007 – 30/12/2008 – Bologna, Italy

**HYDROLOGIST – PROGEA SRL**

*Responsibilities included the hydrological study of several sub-catchments of the Po River (Italy) for the Real Time Flood Forecasting System implementation on behalf of ARPA SIM Emilia-Romagna*

31/12/2010 – 30/01/2013 – Napoli, Italy

**HYDROLOGIST/SOFTWARE DEVELOPER – IDROLOGIA & AMBIENTE SRL**

*Responsibilities included full cycle of software development, from initial design to final release, performing data analysis and processing for real-time flood forecasting systems, leading and performing the implementation and maintenance of real-time flood forecasting systems.*

- Development of the hydrological model TOPKAPI-X using Fortran90 language
- Development of the TOPKAPI-X Visual Interface using VB.Net language
- Development and implementation of the Real Time Flood Forecasting System of the Sele River on behalf of the Civil Protection Department of Campania Region (Italy) using Deltares-FEWS, TOPKAPI-X hydrological model, Neural Networks and the Bayesian methodology developed during the PhD thesis

31/12/2014 – 30/12/2018 – Princeton, United States

**CONSULTANT ENGINEER/SOFTWARE DEVELOPER – CLIMATE PARTNERSHIP LPC**

*Responsibilities included developing web interface (Python, PHP, JavaScript and CSS) for global flood and drought monitor*

30/11/2018 – CURRENT – Vitoria-Gasteiz, Spain

**CONSULTAT HYDROLOGIST – WATER AGENCY OF BASQUE COUNTRY**

*Responsibilities included applying hydrological models to the Basque Country catchments, improving their Real Time Forecasting System and teaching Deltares-FEWS system*

31/10/2019 – 30/01/2020 – Bilbao, Spain

**CONSULTANT – GOBIERNO VASCO**

*Developing a statistical uncertainty processor for forecast of floods caused by the combination of high tide and extreme river discharge*

01/04/2020 – 31/03/2021 – Italy

**CONSULTANT – ISTITUTO SUPERIORE PER LA PROTEZIONE E LA RICERCA AMBIENTALE (ISPRA)**

*Application of the bayesian postprocessor Model Conditional Processor (MCP) to estimate the predictive uncertainty of sea level forecast from different models and its implementation for real time operations.*

20/11/2022 *Gabriele Coccia*

31/12/2014 – 31/12/2020 – Pavia, Italy

**SENIOR WEATHER RISK SPECIALIST/HEAD OF MODEL DEVELOPMENT – RED SPA**

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*Responsibilities include flood risk analysis; development of excess of rainfall, flood and tropical cyclone risk models for parametric insurance products; development of dynamic web tools for real time models monitoring; project management; dissemination; capacity building; project management.*

01/01/2021 – CURRENT – Pavia, Italy

**SENIOR WEATHER RISK MANAGER – RED SPA**

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*Responsibilities include weather risk related projects management and weather risk team leadership. Flood risk analysis; development of excess of rainfall, flood and tropical cyclone risk models for parametric insurance products; development of dynamic web tools for real time models monitoring; dissemination; capacity building.*

● **EDUCATION AND TRAINING**

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31/08/2001 – 14/12/2004 – Bologna, Italy

**BS IN ENVIRONMENTAL ENGINEERING – University of Bologna**

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**Address** Bologna, Italy | **Final grade** 107/110 |

**Thesis** CRITERI E NORMATIVE DI LEGGE PER LA STIMA DEL DEFLUSSO MINIMO VITALE IN CORSI D'ACQUA NATURALI.

31/08/2004 – 18/03/2007 – Bologna, Italy

**MS IN ENVIRONMENTAL ENGINEERING – University of Bologna**

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**Address** Bologna, Italy | **Final grade** 110/110 |

**Thesis** A Bayesian post-processor for Real Time Flood Forecasting

31/12/2007 – 15/05/2011 – Bologna, Italy

**PHD IN PHYSICAL MODELING FOR THE ENVIRONMENT PROTECTION – University of Bologna**

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**Address** Bologna, Italy | **Final grade** Excellent |

**Thesis** Analysis and developments of uncertainty processors for real time flood forecasting

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## LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C2	C2	C2	C2	C2
<b>SPANISH</b>	C2	C2	C2	C2	C1
<b>FRENCH</b>	A1	A1	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## DIGITAL SKILLS

### My Digital Skills

Microsoft office (Word, Excel, Powerpoint, Outlook) | Programming language PYTHON | FORTRAN 77/90/95 | C, C++, C# | Django Web Development | Java Programming language | Web Development: HTML 5, CSS, JavaScript | Linux (RHEL, CentOS, Ubuntu, Debian) | VB.Net | R Programming | Programming SQL | GIS software: ArcGIS, QGIS | GrADS

## COMMUNICATION AND INTERPERSONAL SKILLS

Effective communication capability

Self-motivated to work independently, as well as in team projects

Able to present complex concepts to non-technical audience

Well-developed interpersonal skills, positive and resourceful attitude

## ORGANISATIONAL SKILLS

Well organized multi-tasking coordination ability

## PUBLICATIONS

Recent developments in predictive uncertainty assessment based on the model conditional processor approach

<https://doi.org/10.5194/hess-15-3253-2011> – 2011

Coccia, G., & Todini, E. (2011). Recent developments in predictive uncertainty assessment based on the model conditional processor approach. *Hydrology and Earth System Sciences*, 15(10), 3253-3274.

20/11/2022 *Gaetano Coccia*

Main role: development of the bayesian processor to assess predictive uncertainty, implementation of neural network and TOPKAPI models, analysis of results.

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### **Creating consistent datasets by combining remotely-sensed data and land surface model estimates through Bayesian uncertainty post-processing: The case of Land Surface Temperature from HIRS**

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<https://doi.org/10.1016/j.rse.2015.09.010> – 2015

Coccia, G., Siemann, A. L., Pan, M., & Wood, E. F. (2015). Creating consistent datasets by combining remotely-sensed data and land surface model estimates through Bayesian uncertainty post-processing: The case of Land Surface Temperature from HIRS. *Remote Sensing of Environment*, 170, 290-305.

Main role: Application of the bayesian uncertainty processor to combine remote sensed HIRS data of Land surface Temperature and reanalysis data from CFSR; analysis of results

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### **Development and Analysis of a Long Term, Global, Terrestrial Land Surface Temperature Dataset Based on HIRS Satellite Retrievals**

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<https://doi.org/10.1175/JCLI-D-15-0378.1> – 2016

Siemann, A. L., Coccia, G., Pan, M. & Wood, E. F. (2016). Development and Analysis of a Long Term, Global, Terrestrial Land Surface Temperature Dataset Based on HIRS Satellite Retrievals. *Journal of Climate* 2016 29:10, 3589-3606.

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### **The multi temporal/multi-model approach to predictive uncertainty assessment in real-time flood forecasting**

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<https://doi.org/10.1016/j.jhydrol.2017.06.030> – 2017

Barbetta, S., Coccia, G., Moramarco, T., Brocca, L. & Todini E. (2017). The multi temporal/multi-model approach to predictive uncertainty assessment in real-time flood forecasting. *Journal of Hydrology*, Volume 551, 2017, Pages 555-576.

Main role: configuration of the bayesian processor to assess predictive uncertainty.

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### **Real-time flood forecasting downstream river confluences using a Bayesian approach**

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<https://doi.org/10.1016/j.jhydrol.2018.08.043> – 2017

Barbetta, S., Coccia, G., Moramarco, T. & Todini E. (2017). Real-time flood forecasting downstream river confluences using a Bayesian approach. *Journal of Hydrology*, Volume 565, 2018, Pages 516-523

Main role: support in the configuration of the bayesian processor to assess predictive uncertainty

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### **Satellite remote sensing for water resources management: Potential for supporting sustainable development in data-poor regions**

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<https://doi.org/10.1029/2017WR022437> – 2018

Sheffield, J., Wood, E. F., Pan, M., Beck, H., Coccia, G., Serrat-Capdevila, A., & Verbist, K. (2018). Satellite remote sensing for water resources management: Potential for supporting sustainable development in data-poor regions. *Water Resources Research*, 54, 9724 – 9758.

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### **Complementing near-real time satellite rainfall products with satellite soil moisture-derived rainfall through a Bayesian Inversion approach**

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<https://doi.org/10.1016/j.jhydrol.2019.03.038> – 2019

Massari, C., Maggioni, V., Barbetta, S., Brocca, L., Ciabatta, L., Carnicia, S., Moramarco, T., Coccia, G., & Todini, E. (2019). Complementing near-real time satellite rainfall products with satellite soil moisture-derived rainfall through a Bayesian Inversion approach. *Journal of Hydrology*, Volume 573, 2019, Pages 341-351.

Main role: support in the configuration of the bayesian processor to assess predictive uncertainty

20/11/2022 G. Coccia