

Louise Crochemore

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Born May 1989, French nationality

WORK EXPERIENCE

- Sep 2017 – Present
Research scientist
[SMHI, Hydrology Research, Norrköping, Sweden](#)
- Contribution to H2020 research projects: IMPREX, SPACE-O, CLARA, S2S4E and to the Copernicus-funded contracts SWICCA (C3S_441_Lot1), GLORIOUS (C3S_422_Lot1) and Water-SIS
- Jul 2016 – Aug 2017
1 year
Postdoctoral researcher
[SMHI, Hydrology Research, Norrköping, Sweden](#)
- Setup of the HYPE model at global scale
 - Evaluation of seasonal streamflow forecasting and associated sources of uncertainty
- Feb 2013 – Apr 2016
3 years
PhD candidate
[Irstea, Catchment Hydrology Research Group, Antony, France](#)
- Development of a coupled low-flow forecasting system and water reservoir model to improve the management of the Arzal dam during low rain seasons
 - Collaboration with: IAV, France, and ECMWF, UK
 - Work under the Interreg IVB NWE project DROP
- Aug 2012 – Jan 2013
6 months
Research Engineer
[Irstea, Catchment Hydrology Research Group, Antony, France](#)
- Development of a graphic tool to help decision-making in short-range flood forecasting
 - Collaboration with SCHAPI and SPC (French national and local flood forecasting services)
- Oct 2011 – Mar 2012
6 months
Research Engineer
[Schlumberger Water Services, Delft, the Netherlands](#)
- Development of a graphical interface to monitor groundwater measurements for carbon dioxide storage

EDUCATION AND TRAINING

- Feb 2013 – Apr 2016
3 years
PhD candidate in Geosciences, Natural resources and Environment
[AgroParisTech - Doctoral School of Geosciences, Ressources Naturelles et Environnement](#)
- Operational hydrology, Seasonal forecasting, Reservoir management
Supervised by: Prof. Maria-Helena Ramos and Prof. Vazken Andréassian
PhD developed within the Interreg DROP Project
- Sep 2015, Sep 2016
4 days
Participation to the course “Multi-basin modelling at the large scale using HYPE”
[Swedish Meteorological and Hydrological Institute \(SMHI\), Norrköping, Sweden](#)
- March 2015
1 week
Participation to the Course “Introduction to Analysis in Meteorology”
[Electricité de France \(EDF\), Grenoble, France](#)
- June 2014
1 week
Participation to the summer school “Drought Hazard and Management: Challenges in a Changing World”
[European project FP7 Drought R-SPI, Ermoupoli, Syros, Greece](#)
- Sep 2008 – Sep 2011
3 years
Engineering (BSc) and Master (MSc) degrees in Geosciences
[Ecole Polytechnique Universitaire, Université Paris VI Pierre et Marie Curie, Paris, France](#)
- Sep 2010 – Dec 2010
4 months
Participation to a student exchange program in Water Sciences
[University of British Columbia, Vancouver, Canada](#)
- Sep 2006 – Sep 2008
2 years
Classes Préparatoires aux Grandes Ecoles in Mathematics and Physics
[Condorcet high school, Paris, France](#)

INTERNSHIPS

Feb 2011 – Sep 2011
8 months

Jun 2010 – Aug 2010
3 months

Jul 2009
1 month

[Irstea, Catchment Hydrology Research Group, Antony, France](#)

- Development of a research project on the evaluation of hydrological models

[Veolia Propreté, Landfill and Treatment Direction, Nanterre, France](#)

- Collecting and analysing electrical resistivity data to monitor water content in landfills

[LTHE, Grenoble, France](#)

- Maintenance of hydrological measurement stations

PUBLICATIONS AND OTHER RESEARCH OUTPUTS

Publications

Crochemore, L., Ramos M.-H., Pechlivanidis, I. G., to be submitted. Can continental models yield useful seasonal information at the catchment scale?

Crochemore, L., Ramos M.-H., Pappenberger F., Perrin, C., 2017. Seasonal streamflow forecasting by conditioning climatology with precipitation indices. *Hydrology and Earth System Sciences*. 21, 1573–1591. doi:10.5194/hess-21-1573-2017

Crochemore, L., Ramos M.-H., Pappenberger F., 2016. Bias correcting precipitation forecasts to improve the skill of seasonal streamflow forecasts. *Hydrology and Earth System Sciences*. 20, 3601-3618. doi:10.5194/hess-20-3601-2016

Crochemore, L., Ramos M.-H., Pappenberger F., Andel S. J., Wood A., 2016. An experiment on risk-based decision-making in water management using monthly probabilistic forecasts. *Bull. Amer. Meteor. Soc.* 97, 541–551. doi:10.1175/BAMS-D-14-00270.1

Crochemore, L., Perrin, C., Andréassian, V., Ehret, U., Seibert, S.P., Grimaldi, S., Gupta, H., Paturel, J.-E., 2015. Comparing expert judgement and numerical criteria for hydrograph evaluation. *Hydrological Sciences Journal* 60, 402–423. doi:10.1080/02626667.2014.903331
[Featured by the journal](#)

Pechlivanidis, I. G., **Crochemore, L.**, Bosshard, T., 2017. Seasonal hydrological forecasting in Europe: Analysis of skill and its key driving factors, *Proceedings of 15th International Conference on Environmental Science and Technology*.
https://cest.gnest.org/sites/default/files/presentation_file_list/cest2017_00308_oral_paper.pdf

La Jeunesse, I., Larrue, C., Furusho, C., Ramos, M.-H., Browne, A., de Boer, C., Vidaurre, R., **Crochemore, L.**, Penasso, A., Arrondeau, J.-P., 2016. Chapter 6: The governance context of drought policy and pilot measures in the Arzal dam and reservoir, Vilaine catchment, Brittany, France, in: *Governance for Drought Resilience: Land and Water Drought Management in Europe*. Springer International Publishing. 109-138. doi:10.1007/978-3-319-29671-5

Perrin, C., Ramos, M.-H., Andréassian, V., Nicolle, P., **Crochemore, L.**, Pushpalatha, R., 2015. Improved rainfall-runoff modelling tools for low-flow forecasting: Application to French catchments, in: *Drought: Research and Science-Policy Interfacing*. CRC Press, pp. 259–265.
<http://www.crcnetbase.com/doi/abs/10.1201/b18077-45>

Arrondeau, J.-P., Penasso, A., Ramos, M.-H., **Crochemore, L.**, 2015. Chapter “Pilot Freshwater”, p. 41-47. In: Bressers, N. (ed), *DROP Handbook – Practice measures example book, Benefit of governance in DROught adaptation – A handbook for regional water authorities*, The Netherlands, January 2015, 64 p.
<https://www.eip-water.eu/sites/default/files/DROP-Handbook-version-final-English.pdf>

Oral presentations Invited talks

Ramos, M.-H., van Andel, S. J., Pappenberger, F., **Crochemore, L.**, Wood, A., Zappa, M., Liechti, K., Amal, L., Cloke, H. L., Stephens, E., Wetterhall, F., Werner, M., Cranston, M., Role-play games to advance probabilistic forecasting in hydrology. General Assembly, 2018, Austria.

Wanders, N., Amal, L., Pan, M., Pechlivanidis, I. G., Thober, S., Buontempo, C., **Crochemore, L.**, Harrigan, S., Kumar, R., Prudhomme, C., Samaniego, L., Smith, K., Wood, E., High-resolution hydrological seasonal forecasting for water resources management over Europe. General Assembly, 2018, Austria.

Pechlivanidis, I. G., **Crochemore, L.**, Photiadou, C., Arheimer, B., Pan-European seasonal forecasting services: Limitations and need for knowledge purveyors. General Assembly, 2018, Austria.

Crochemore, L., Pechlivanidis, I., Forecast Uncertainties: sources, evaluation, communication. Mar. 2018, CLARA Multi-User Forum, Sweden. [Invited](#)

Crochemore, L., Pechlivanidis, I., Skill sensitivity in Europe and site-specific diagnostics based on

Posters and PICOs

- catchment characteristics. 2018 HEPEX Workshop, Feb. 2018, Australia. [Invited](#)
- Crochemore, L.**, Pechlivanidis, I., Ramos, M.-H., How to compare what seems incomparable in seasonal hydrological forecasting? European Geosciences Union General Assembly, 2017, Austria.
- Pechlivanidis, I. G.*, **Crochemore, L.**, What is the relative role of initial hydrological conditions and meteorological forcing to the seasonal hydrological forecasting skill? Analysis along Europe's hydro-climatic gradient. European Geosciences Union General Assembly, 2017, Austria.
- Crochemore, L.**, Seasonal streamflow forecasting for reservoir management, May 2016, Irstea Lyon, France. [Invited](#)
- Crochemore, L.**, Seasonal streamflow forecasting for reservoir management, Apr. 2016, PhD Defense, AgroParisTech, France.
- Crochemore, L.**, Ramos, M.-H., Penasso, A., Perrin, C., A low-flow forecasting and water management system to support reservoir management under multiple water uses. HEPEX Seasonal Hydrological Forecasting Workshop, Sep. 2015, Sweden.
- Crochemore, L.**, Ramos, M.-H., Low-flow forecasting and reservoir management: the case of the Arzal dam. DROP Drought team meeting with stakeholders (Freshwater pilots), Sep. 2015, France.
- Crochemore, L.**, Ramos, M.-H., Development of a tool for managing low flows and enhancing reactive adaptation: Case study of the Arzal dam, Vilaine, France. DROP 4th Transnational Exchange Meeting, Sep. 2014, Germany.
- Crochemore, L.**, Ramos, M.-H., Perrin, C., Penasso, A., Using seasonal forecasts in a drought forecasting system for water management: case-study of the Arzal dam in Brittany. European Geosciences Union General Assembly, Apr. 2014, Austria.
- Penasso, A.*, **Crochemore, L.**, Gérer les étiages de la Vilaine grâce au barrage d'Arzal. Carrefour des Gestions de l'Eau, Jan. 2014, France. [Invited](#)
- Crochemore, L.**, Ramos, M.-H., Perrin, C., Penasso, A., A risk-based visualisation tool to support decision making in low flow forecasting and water management: case-study of the Arzal dam in Brittany. European Meteorological Society, Sep. 2013, United Kingdom.
- Perrin, C.*, *Andréassian, V.*, **Crochemore, L.**, Expert judgement vs. statistical goodness-of-fit for hydrological model evaluation: Results of experiment. XXV IUGG General Assembly, Jul. 2011, Australia.
- Crochemore, L.**, Pechlivanidis, I., G., Regional sensitivity of long-term forecasts over Europe. European Geosciences Union General Assembly, 2018, Austria. [Highlight](#)
- Crochemore, L.**, Pimentel, R., Pineda, L., Hasan, A., Pechlivanidis, I., G., Isberg, K., Andersson, J., Arheimer, B., Understanding and evaluating catchment memory from a global hydrologic model. European Geosciences Union General Assembly, 2018, Austria.
- Crochemore, L.**, Lindskog, M., Landelius, T., Pechlivanidis, I., G., On the added-value of high resolution meteorological forcings for continental scale impact modelling. European Geosciences Union General Assembly, 2018, Austria.
- Arheimer, B.*, Andersson, J., **Crochemore, L.**, Hasan, A., Isberg, K., Pers, C., Pimentel, R., Pineda, L., Rosberg, J., Catchment modelling at the global scale using the World-Wide HYPE (WWH). General Assembly, 2018, Austria.
- Pineda, L.*, Andersson, J., Hundedea, Y., **Crochemore, L.**, Hasan, A., Pimentel, R., Isberg, K., Arheimer, B., Global patterns of streamflow signatures and their physiographic controls based on observations from some ten thousand catchments. General Assembly, 2018, Austria.
- Macian-Sorribes, H.*, Pechlivanidis, I. G., Pulido-Velazquez, M., **Crochemore, L.**, A fuzzy post-processing approach for applying pan-European hydrological forecasts to a Mediterranean river basin management. General Assembly, 2018, Austria.
- Giuliani, M.*, **Crochemore, L.**, Pechlivanidis, I. G., Castelletti, A., From seasonal forecast skill to end-user economic benefit: the case of the Lake Como. General Assembly, 2018, Austria.
- Pimentel, R.*, **Crochemore, L.**, Hasan, A., Pineda, L., Berg, P., Pechlivanidis, I. G., Isberg, K., Andersson, J., Arheimer, B., Correction of high elevation precipitation at global scale for hydrological modelling. General Assembly, 2018, Austria.
- Crochemore, L.**, Ramos, M.-H., Pappenberger, F., Perrin, C., On the impact of bias correcting and conditioning precipitation inputs on seasonal streamflow forecast quality. European Geosciences Union General Assembly, 2017, Austria.
- Arnal, L.*, Pappenberger, F., Ramos, M.-H., Cloke, H. L., **Crochemore, L.**, Giuliani, M., Aalbers, E., Pathways to designing and running an operational flood forecasting system: an adventure game! European Geosciences Union General Assembly, 2017, Austria. [Highlight](#)
- Pimentel, R.*, **Crochemore, L.**, Hasan, A., Pineda, L., Isberg, K., Arheimer, B., Synchronising data sources and filling gaps by global hydrological modelling. European Geosciences Union General

	<p>Assembly, 2017, Austria.</p> <p><i>Arheimer, B., Andersson, J., Crochemore, L., Donnelly, C., Gustafsson, D., Hasan, A., Isberg, K., Pechlivanidis, I. G., Pimentel, R., Pineda, L., Global, continental and regional water balance estimates from HYPE catchment modelling. European Geosciences Union General Assembly, 2017, Austria.</i></p> <p><i>Ramos, M.-H., Crochemore, L., Pappenberger, F., Perrin, C., Seasonal streamflow forecasting: experiences with precipitation bias correction and SPI conditioning to improve performance for hydrological events. American Geosciences Union General Assembly, 2016, United States.</i></p> <p>Crochemore, L., Penasso, A., Ramos, M.-H., Perrin, C., Development of a drought forecasting system and reservoir management model for water supply: Case study of the Arzal dam (Brittany, France). 26th IUGG General Assembly, 2015, Czech Republic.</p> <p>Crochemore, L., Ramos, M.-H., Pappenberger, F., Assessing the skill of seasonal precipitation and streamflow forecasts in sixteen French catchments. European Geosciences Union General Assembly, 2015, Austria.</p> <p>Crochemore, L., Ramos, M.-H., Perrin, C., Penasso, A., Combining medium-range and seasonal forecasts in a drought forecasting system for water management: Case-study of the Arzal dam in Brittany, France. DROUGHT R-SPI Summer School, 2014, Greece.</p> <p>Crochemore, L., Ramos, M.-H., Pappenberger, F., van Andel, S.-J., Wood, A., Risk-based decision making in water management using probabilistic forecasts: results from a game experiment. European Geosciences Union General Assembly, 2014, Austria.</p>
Thesis	<p>Crochemore, L., 2016. Seasonal streamflow forecasting for reservoir management. PhD Thesis, Irstea (Antony), AgroParisTech (Paris), 213 pp.</p> <p>Crochemore, L., 2011. Evaluation of hydrological models: Expert judgement vs Numerical criteria. Master Thesis, PolyTech Paris, Université Pierre et Marie Curie, Paris, 54 pp.</p> <p>Crochemore, L., 2010. Etude de mesures géophysiques réalisées dans les puits d'une installation de stockage de déchets. Internship report, PolyTech Paris, Université Pierre et Marie Curie.</p>
Blog Posts	<p>2014 "Sharing experiences on seasonal forecasting". Crochemore, L., Ramos, M.-H., Wood, A., in HEPEX blog</p> <p>2014 "Dam 'n drought". Crochemore, L., in DROP project blog</p>
Video	<p>2014 "Hydrological Drought Predictions for Reservoir Management: What's the Use?" Crochemore L., EGU Communicate Your Science Video Competition winning entry</p> <p>Q&A at EGU session: "Public Engagement and Outreach – Scientists Must Film! Filmmaker Workshop", Apr. 2015. <i>Invited</i></p>
Game	<p>2018 Seasonal forecasting for water management in different certainty and skill contexts. Crochemore, L., Photiadou, c., Pechlivanidis, I., Cantone, C.</p> <p>2017 Pathways to running a flood forecasting centre: an adventure game! Arnal, L., Pappenberger, F., Ramos, M.-H., Cloke, H., Crochemore, L., Giuliani, M., Aalbers, E., Stephens, L. dans le blog HEPEX</p> <p>2013 "A risk-based decision-making game relevant to water management. Try it yourself!" Crochemore, L., Pappenberger, F., van Andel, S. J., Ramos, M.-H., Wood, A., in HEPEX blog</p>

PROFESSIONAL ACTIVITIES

2013-2015, 2017-2019 Member, European Geosciences Union

Reviewer for: Hydrology and Earth System Sciences, Journal of Hydrometeorology, Journal of Hydrology, Hydrological Processes, Earth System Dynamics and Weather, Climate, and Society

Convener of the scientific sessions:

EGU 2019 – "From sub-seasonal forecasting to climate projections: predicting hydrologic extremes and servicing water managers"

EGU 2018 – "From sub-seasonal forecasting to climate projections: predicting hydrologic extremes and servicing water managers"

EMS 2017 – "High-resolution precipitation monitoring for hydrological and climate-related applications"

EGU 2017 – "From sub-seasonal forecasting to climate projections: predicting hydrologic extremes and servicing water managers"

EMS 2016 – "Interfacing hydrological and meteorological models in forecasting system"

EGU 2016 – "Servicing water users by forecasting, outlooks and climate projections for water services"

TEACHING EXPERIENCE

2018 Lecture on “Cycle de l’eau, modélisation et données hydrologiques” at the SMHI ITP course (SIDA), Sweden

2018 Exercises and support during the 2018 HYPE course, SMHI, Sweden

2017 Lecture on Hydrological forecasting within the H2020 CRESCENDO project, Sweden

2014 and 2015 High school lecturing: Introduction to hydrology (6 hours)

2014 Sciences Workshop with high school students at the occasion of the Festival of Science (8 hours)

OTHER SKILLS

Languages

French : Mother tongue
English : Fluent (read, write, speak)
Spanish : Basic communication skills
Swedish : Basic communication skills

Computer skills

Operating systems : Windows, Linux
Programming languages : R, FORTRAN, Bash, Python, SQL
Models : GR hydrological models, HYPE models (E-HYPE, WW-HYPE)