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Data Scientist

Work experience and internships

Since Feb. 2013 — **Permanent position at INRAE – HYCAR Research Unit (Antony)**
IRSTEA & INRA became INRAE in 2020
- Hydrological modelling
- Software development
- Database management for the ORACLE hydrological and biogeochemical observatory
- Cartography and spatial analysis
- Statistics and data analysis

Sep. 2012 to Jan. 2013 — **Fixed term contract at ONEMA – Research & Development Department (Vincennes)**
Assessing the impact of new bioindicators (study for French Ministry of Environment)
ONEMA & ONCFS became OFB in 2020
- Relationship with scientists to identify possibilities for adjusting the quality class limits of indicators in relation with the results of the European WFD intercalibration exercise
- Aggregation of the different bioindicators and development of the national summary of results

Supervision: Yorick Reyjol

Oct. 2008 to Aug. 2012 — **Fixed term contract at CEMAGREF – Hydrosystems and Bioprocesses Research Unit (Antony)**
IPR+ programme (study for ONEMA)
CEMAGREF became IRSTEA in 2012
- Developing the new French fish-based index to assess river ecological quality: modelling metric responses to the environment, analysing the sensitivity of metrics and index responses to human pressures, ratification of results in interaction with users

Supervision: Didier Pont & Jérôme Belliard

European WFD intercalibration exercise (study for the JRC of the European Commission)
- *Co-leader of the ECOSTAT group in charge of European fish-based methods to assess river ecological quality*
- *Establishing the official European database of the group*
- *Developing methods and computing programs in order to harmonize the European indices*

Supervision: Didier Pont

May 2008 to Sep. 2008 — **Fixed term contract at CEMAGREF – Hydrobiology Research Unit (Aix-en-Provence)**
IPR+ programme (study for ONEMA)
- Establishment of the national database for the development of the new French fish-based index to assess river ecological quality

Supervision: Didier Pont

Apr. 2007 to Apr. 2008 — **Fixed term contract at CEMAGREF – Hydrobiology Research Unit (Aix-en-Provence)**
CYPREF project
- Computing cyprinids habitat preferences and developing fish–habitat models on the 5M7 software

Supervision: Yann Le Coarer

Oct. 2006 to Mar. 2007 — **Fixed term contract at CEMAGREF – Hydrobiology Research Unit (Aix-en-Provence)**
Therm and Hydrobiology programme (study for Electricity of France [EDF])
- Analysis of the influence of temperature on growth of juvenile cyprinid fish on the Lower Rhône river

Supervision: Georges Carrel

Feb. 2006 to Aug. 2006 — **Internship at ONCFS – Predatory Animals Research Unit (Gières)**
Master's 2nd year in Biomathematics and Biocomputing
ONEMA & ONCFS became OFB in 2020
- Analysis of grey wolf (*Canis lupus*) diet and analysis of results sensitivity to determination bias

Supervision: Christophe Duchamp

Nov. 2004 to May 2005 — **Internship at Claude Bernard University, Lyon 1 – Biometry and Evolutionary Biology Laboratory (Villeurbanne)**
Master's 1st year in Biomathematics and Biocomputing
- Analysis of the effects of heavy metals on life history traits of chironomids (*Chironomus riparius*)

Supervision: Sandrine Charles

Academic education

Sep. 2006 — **Master's 2nd year** in **Biomathematics & Biocomputing**
Claude Bernard University, Lyon 1 [UCBL] (Villeurbanne)

Jun. 2005 — **Master's 1st year** in **Biomathematics & Biocomputing**, UCBL (Villeurbanne)

Jun. 2004 — **Maîtrise [4th year post-graduate degree]** in **Population & Ecosystem Biology**, UCBL (Villeurbanne)

Jun. 2003 — **Bachelor's** in **Biology of Organisms**, UCBL (Villeurbanne)

Jun. 2002 — **DEUG [General University Studies Diploma]** in **Life Sciences**, UCBL (Villeurbanne)

Teachings provided

2020 **GIS/Remote Sensing Seminar (online) – Master 2 Fundamentals of Remote Sensing (IPGP), Master 2 TGAE (univ. de Paris) & Master 2 IGAST (univ. Gustave Eiffel)**
- Use of DTMs and GIS for hydrological modelling [2 hours]

Since 2017 **Hydrological modelling course – VET engineers & Master 2 SAGE - École des Ponts ParisTech (Marne-la-Vallée)**
- Tutorial works [1 × 2.5 hours & 4 × 5 hours]

Since 2016 **Hydrological modelling course – Master 2 SDUEE-HHGE - Sorbonne University (Paris)**
- Lecture course [1 × 9 hours, 4 × 6 hours & 1 × 3 hours]
- Tutorial works [1 × 6 hours & 5 × 3 hours]

2016 **Statistical hydrology course – 1st year engineers in Water engineering - Polytech Nice–Sophia (Antibes)**
- Lecture course [1 × 2 hours]
- Tutorial works [2 × 2 hours]

Training courses provided

Since 2018 **Trainings in hydrological modelling using the airGR & the airGRteaching software**
- 2022: IAHS-2022 conference workshop. Rainfall-runoff modelling with the open-source airGR and airGRteaching R packages (Montpellier, France)
  Organisation of the workshop. Presentation and familiarization with the software [14 hours / 15 attendees]
  With: Guillaume Thirel (INRAE Antony), Charles Perrin (INRAE Antony) & David Dorchies (INRAE Montpellier)
- 2021: Using the GR hydrological models with the airGR and airGRteaching R packages (Cotonou, Bénin)
  Presentation of the models and the softwares [4 hours / 40 attendees]
  With: Guillaume Thirel (INRAE Antony)
- 2019: Flood forecasting workshops: familiarisation with tools and methods (Rabat, Morocco)
  Presentation and familiarization with the software [12 hours / 15 attendees]
  Cooperation: Pierre Rigaudiere (Suez) & Sébastien Jeannelle (Suez)
- 2019: 2nd HydroGR days meetings for academic researchers (Antony)
  Organisation of the meetings. Presentation and familiarization with the software [18 hours / 25 attendees]
  With: Guillaume Thirel (INRAE Antony) & Charles Perrin (INRAE Antony)
- 2018: 1st HydroGR days meetings for operational departments and design offices (Antony)
  Organisation of the meetings. Presentation and familiarization with the software [13 hours / 20 attendees]
  With: Guillaume Thirel (INRAE Antony) & Charles Perrin (INRAE Antony)

Since 2014 (in French or in English) **R trainings (Antony) for researchers and students from INRAE, Sorbonne University, CNRS and the GRNE Doctoral School (ED 398)** [5 to 10 attendees]
- Beginners' course (programming and statistics) [1 × 14 hours & 3 × 21 hours]
- Language basics (programming) [4 × 14 hours & 16 × 21 hours]
- Geomatics basics (programming and geomatics) [6 × 14 hours]

2014 **IPR+ training for the engineers from ONEMA and the French water agencies (Vincennes)**
- Presentation and familiarization with of the fish-based index [28 hours / 15 attendees]

Supervisory responsibilities

Since 2022 (12 months / ongoing) **G. Mendoza Guimarães – Data scientist - INRAE, HYCAR Research Unit (Antony)**
Hydro-climatic databases management

2021-2022 (4 months) **A. Chanoual, L. Demange & A. Gazull – 3rd year engineers in Water engineering - Polytech Nice–Sophia (Antibes)**
Assessment of available software for teaching hydrological modeling
Co-supervision: Pierre Brigode (Polytech Nice–Sophia)

2021 (6 months) **L. Nunez Torres – Master 2 of engineering in Geoscience - Polytech Sorbonne (Paris)**
Simulation of a regulated basin using a semi-distributed hydrological model: the Seine River basin (France) and its reservoirs
Co-supervision: David Dorchies (INRAE Montpellier) & Guillaume Thirel (INRAE Antony)

2020-2021 (12 months) **J.-B. Boissonnat – Data scientist - INRAE, HYCAR Research Unit (Antony)**
Hydro-climatic databases management

2019-2020 (15 months) **V. Mansanarez – Postdoc - University of Pau and Pays de l'Adour (Anglet)**
Statistical hydrological modelling of the Adour basin (BIGCEES project)
Co-supervision: Guillaume Thirel (INRAE Antony)
Cooperation: Benoît Liquet (University of Pau and Pays de l'Adour)

2019-2020 (20 days) **R. Bertrand & L. Coquemont – Master 2 of engineering in Geoscience - Polytech Sorbonne (Paris)**
Establishment of a reference sample of watersheds in France
Co-supervision: Benoît Génot

2019 (6 months) **P. Astagneau – Master 2 of engineering in Geoscience - Polytech Sorbonne (Paris)**
Comparison of hydrological modelling R packages
Co-supervision: Guillaume Thirel (INRAE Antony)
Cooperation: Juraj Parajka (Technische Universität Wien) & Alberto Viglione (Politecnico di Torino)

2018-2020 (26 months) **B. Génot – Data scientist - INRAE, HYCAR Research Unit (Antony)**
Hydro-climatic databases management & software development

2017 **S. V. Mata Espinoza – Master 2 SDUEE-HHGE - Pierre and Marie Curie University (Paris)**
6 months airGR, a hydrological modelling package to improve? Assessment on a large sample of watersheds
Co-supervision: Guillaume Thirel (INRAE Antony)

2016 **I. Haddadi – Master 1 Applied mathematics, statistics - Blaise Pascal University (Clermont-Ferrand)**
3 months Statistical tests of significance applied to hydrology
Co-supervision: Guillaume Thirel (INRAE Antony)

Social and cultural life

Music Graduate of the conservatory (trumpet, musical theory, musical analysis, chamber music). Member of the *Brassage Brass Band* (1^{st} prizes in the 1^{st} division at the French national contests in 2009, 2011-2017, 2019-2020, 2022), of the *Brassage Wind Ensemble* and of the *Ut cinquième* and *Note & Bien* symphony orchestras. Additional musician in several orchestras (*Hélios*, *Les Ondes plurielles*, *Ensemble musical Furiante*, *Association symphonique de Paris*, etc.)

Entertainment Instructor and trumpet teacher at the musical summer camp of the Dauphiné Musical Federation (FSMD) at Estrablin during the months of July from 2000 to 2003

Reading Essays on the theory of evolution, ethology, history of science or epistemology

Sport Hiking, ultimate frisbee, badminton, cross-country skiing

Misc Driving license, first aid rescuer at work (since 2015)

Publications

Scientific papers

A11. Astagneau, P.C., Thirel, G., **Delaigue, O.**, Guillaume, J.H.A., Parajka, J., Brauer, C.C., Viglione, A., Buytaert, W. & Beven, K.J. (2021). Technical note: Hydrology modelling r packages – a unified analysis of models and practicalities from a user perspective. *Hydrology and Earth System Sciences* 25, 3937–3973, doi: 10.5194/hess-25-3937-2021.

A10. Piazzi, G., Thirel, G., Perrin, C. & **Delaigue, O.** (2021). Sequential data assimilation for streamflow forecasting: assessing the sensitivity to uncertinties and to updated variables of a conceptual hydrological model at basin scale. *Water Resources Research* 57, e2020WR028390, doi: 10.1029/2020WR028390.

A9. Pont, D., Valentini, A., Rocle, M., Maire, A., **Delaigue, O.**, Jean, P. & Dejean, T. (2021). The future of fish-based ecological assessment of european rivers: from traditional EU Water Framework Directive compliant methods to eDNA metabarcoding-based approaches. *Journal of Fish Biology* 98, 354–366. doi: 10.1111/jfb.14176.

A8. Tilmant, F., Nicolle, P., Besson, F., Bourgin, F., **Delaigue, O.**, Etchevers, P., Francois, D., Le Lay, M., Perrin, C., Rousset, F., Thiéry, D., Magand, C., Leurent, T. & Jacob, E. (2020). PREMHYCE: An operational tool for low-flow forecasting. *La Houille Blanche* 5, 37–44, doi: 10.1051/lhb/2020043.

A7. Slater, L., Thirel, G., Harrigan, S., **Delaigue, O.**, Hurley, A., Khouakhi, A., Prodoscimi, I., Vitolo, C. & Smith, K. (2019). Using R in hydrology: a review of recent developments and future directions. *Hydrology and Earth System Sciences* 23, 2939–2963. doi: 10.5194/hess-23-2939-2019.

A6. Belliard, J., Beslagic, S., **Delaigue, O.** & Tales, E. (2018). Reconstructing long-term trajectories of fish assemblages using historical data: the Seine River basin (France) during the last two centuries. *Environmental Science and Pollution Research* 25, 23430–23450. doi: 10.1007/s11356-016-7095-1.

A5. Uher, E., Besse, J., **Delaigue, O.**, Husson, F. & Lebrun, J. (2018). Comparison of the metal contamination in water measured by diffusive gradient in thin film (DGT), biomonitoring and total metal dissolved concentration at a national scale. *Applied Geochemistry* 88, 247–257. doi: 10.1016/j.apgeochem.2017.05.003.

A4. Beslagic, S. & **Delaigue, O.** (2017). The otter in Belgium: an unpopular and maltreated species (19th-early 20th centuries). *Anthropozoologica* 52, 155–170. doi: 10.5252/az2017n2a2.

A3. Coron, L., Thirel, G., **Delaigue, O.**, Perrin, C. & Andréassian, V. (2017). The suite of lumped GR hydrological models in an R package. *Environmental Modelling & Software* 94, 166–171. doi: 10.1016/j.envsoft.2017.05.002.

A2. Marzin, A., **Delaigue, O.**, Logez, M., Belliard, J. & Pont, D. (2014). Uncertainty associated with river health assessment in a varying environment: the case of a predictive fish-based index in France. *Ecological Indicators* 43, 195–204. doi: 10.1016/j.ecolind.2014.02.011.

A1. Segurado, P., Caiola, N., Pont, D., Oliveira, J., **Delaigue, O.** & Ferreira, T. (2014). Comparability of fish-based ecological quality assessment for geographically distinct Iberian regions. *Science of the Total Environment* 476–477, 785–794. doi: 10.1016/j.scitotenv.2013.09.004.

Inproceedings

IN3. Riffard-Chenet, M., Lebecherel, L., Andréassian, V. & **Delaigue, O.** (submitted). Using historical ground rainfall data to adjust a global rainfall reanalysis data-base over Africa. Africa 2019 Conference & Exhibition, Windhoek, 2-4 Apr. 2019. hal-02609371

IN2. Nicolle, P., Besson, F., **Delaigue, O.**, Etchevers, P., François, D., Le Lay, M., Perrin, C., Rousset, F., Thiéry, D., Tilmant, F., Magand, C., Leurent, T. & Jacob, E. (2020). PREMHYCE: An operational tool for low-flow forecasting. *Proceedings of the International Association of Hydrological Sciences* 383, 381–389, doi: 10.5194/piahs-383-381-2020.

IN1. **Delaigue, O.**, Thirel, G., Coron, L. & Brigode, P. (2018). airGR and airGRteaching: Two open-source tools for rainfall-runoff modeling and teaching hydrology. *HIC 2018. 13th International Conference on Hydroinformatics* (eds. G.L. Loggia, G. Freni, V. Puleo & M.D. Marchis), vol. 3 of *EPiC Series in Engineering*, p. 541–548, EasyChair. doi: 10.29007/qsqj.

Scientific popularization

AP2. **Delaigue, O.**, Eveillé, F., Le Fur, S., Pont, D. & Usseglio-Polatera, P. (2013). Milieux Aquatiques. De nouveaux bioindicateurs, plus sensibles, plus précis. *Techniques sciences méthodes*, 3, p. 14–16, Association scientifique et technique pour l'eau et l'environnement. hal-03367486

AP1. **Delaigue, O.** (2006). Analyse du régime alimentaire du loup et sensibilité des résultats au biais de détermination. *Quoi de neuf ? Bulletin d'information du réseau loup* (eds. E. Marboutin & C. Duchamp), 16, p. 12–13, ONCFS, Réseau Grands Carnivores Loup-Lynx, Gap. `http://www.loupfrance.fr/pdf/Bulletin-Reseau-Loup-2007-N16.pdf` hal-03379840

Scientific book

BK1. **Delaigue, O.** (2016). *Géomatique avec R. Manipuler, analyser et représenter des données géographiques.* IRSTEA. 229 p, hal-03094949.

Collective book chapter

BC1. Tallec, G., Ansart, P., Guérin, A., Derlet, N., Pourette, N., Guenne, A., **Delaigue, O.**, Boudhraa, H. & Loumagne, C. (2013). L'Orgeval, un observatoire long-terme pour l'environnement : caractéristiques du bassin et variables mesurées. *L'Observation long therme en environnement. Exemple du bassin versant de l'Orgeval* (eds. G. Tallec & C. Loumagne), p. 11–33, Quae. ISBN: 978-2-7592-2073-1. hal-02599373

Scientific and technical reports (selection)

R20. Thirel, G., Collet, L., Rousset, F., **Delaigue, O.**, François, D., Gailhard, J., Le Lay, M., Perrin, C., Samacoits, R., Terrier, M., Vidal, J.P. & Wagner, J.P. (2021). Projet CHIMERE 21. Chiers–Meuse. Évolution du régime hydrologie au 21e siècle. Agence de l'eau Rhin–Meuse. Convention 17C08004, 152 p. hal-03206168

R19. Tilmant, F., Bourgin, F. & **Delaigue, O.** (2020). Évolution de l'outil de prévision des étiages PREMHYCE. INRAE-OFB. Partenariat 2019-263. Projet PREMHYCE, Antony, 20 p. hal-03367101

R18. **Delaigue, O.** & Perrin, C. (2019). Expertise sur le calcul du module au droit de la centrale hydroélectrique Cabillon (Pyrénées-Atlantiques). IRSTEA, Antony, 41 p. hal-02609949

R17. Lebecherel, L., Andréassian, V. & **Delaigue, O.** (2019). Base de données spatiale de pluie en Afrique. IRSTEA, Antony, 37 p. hal-02609962

R16. Ramos, M.H., Perrin, C., Andréassian, A., **Delaigue, O.** & Viatgé, J. (2017). Assessment report on the 2016 flood event on the Seine and Loire basins (France). European Flood Awareness System (EFAS) dissemination centre, Rijkswaterstaat (NL), SCHAPI (France), IRSTEA (France), Antony, 43 p. hal-03367563

R15. Nicolle, P., Lebecherel, L., Perrin, C. & **Delaigue, O.** (2016). Détermination de valeurs seuils sécheresse pour les eaux de surface du département de Mayotte. IRSTEA, Antony, 95 p. hal-02606202

R14. Talès, E., Le Pichon, C., Mathieu, A., Zahm, A., Slawson, D., Albert, M.B., Girondin, M., Roy, M., Chevalier, R., Beslagic, S., **Delaigue, O.** & Belliard, J. (2015). Influence des aménagements sur les peuplements de poissons. Programme PIREN-Seine. Phase 6, 2011-2015. Axe 4 : Écologie & Écotoxicologie : Les Déterminants de la qualité écologique du milieu aquatique, p. 9–62, CNRS. hal-02604920

R13. Vincent, B. & **Delaigue, O.** (2015). État du drainage en France : évolution et impact de réserves de substitution à partir des eaux drainées. IRSTEA-MAAF (DGPAAT/S DIR B&E BSE). Partenariat 2012-2014, Antony, 20 p. hal-02606289

R12. Lobligeois, F., **Delaigue, O.** & Furusho, C. (2015). Développement de modèles hydrologiques semi-distribués GRP et TGR sur les bassins du Rhin, Sarre, Bruche, Ill et Zorn. SCHAPI-IRSTEA. Partenariat 2014/MRN/SPC, Antony, 86 p. hal-03303400

R11. Marzin, A., Logez, M., **Delaigue, O.** & Pont, D. (2013). Programme IPR+. Révision de l'indice poisson rivière pour l'application de la DCE. Variabilité temporelle de l'indicateur et incertitudes associées à l'évaluation de la qualité écologique. ONEMA-IRSTEA. Partenariat 2012. Domaine Qualité des eaux. Action 37, Antony, 14 p. hal-03303383

R10. Pont, D., **Delaigue, O.**, Belliard, J., Marzin, A. & Logez, M. (2013). Programme IPR+. Révision de l'indice poisson rivière pour l'application de la DCE. Version V.2.0 de l'indicateur. ONEMA-IRSTEA. Partenariat 2012. Domaine Qualité des eaux. Action 37, Antony, 208 p. hal-03303390

R9. **Delaigue, O.** (2012). Étude comparative entre les résultats des anciens et des nouveaux indicateurs biologiques. Réalisation pour l'exercice d'évaluation de l'état écologique des eaux (hors substances) sur les stations RCS 2007-2009. Test de différents scénarios d'agrégation et de jeux de seuils de classes d'état. ONEMA, Vincennes, 43 p. hal-03303513

R8. Beslagic, S., **Delaigue, O.**, Gorges, G. & Belliard, J. (2012). Répartition historique des espèces piscicoles et astacicoles sur le bassin de la Seine. ONEMA-Cemagref. Partenariat 2011. Domaine Changements globaux et climatiques et hydrosystèmes. Action 11, Antony, 49 p. hal-03303681

R7. Logez, M., Belliard, J., Melcher, A., Kremser, H., Pletterbauer, F., Schmutz, S., Gorges, G., **Delaigue, O.** & Pont, D. (2012). Water bodies in Europe - Integrative Systems to assess Ecological status and Recovery. Deliverable 5.1-3: BQEs sensitivity to global/climate change in European rivers: implications for reference conditions and pressure-impact-recovery chains. WISER, 183 p. hal-02597152

R6. Beslagic, S., Tales, E., **Delaigue, O.**, Van Buuren, L. & Belliard, J. (2012). Programme PIREN-Seine. Évolution à long terme de l'état écologique des cours d'eau du bassin de la Seine. Cemagref, Antony, 17 p. hal-03383159

R5. Belliard, J., Beslagic, S., Demougin, V., **Delaigue, O.** & Pont, D. (2010). Développement d'une métrique basée sur les espèces migratrices. ONEMA-Cemagref. Partenariat 2010. Domaine Espèces aquatiques continentales. Action 5.2, Antony, 19 p. hal-02599672

R4. Pont, D., **Delaigue, O.**, Beers, M., Breine, J., Buijse, T., Caiola, N., Carrasco, I., Dahlberg, M., Demol, T., Duncan, W., Dussling, U., Ferrera, T., Horky, P., Iliescu, S., Kelly, F., Kovac, V., Roset, N., Schabuss, M., Segurado, P., Schuetz, C., Storey, G., Urbanic, G., Vehanen, T., Virbickas, T. & Zogaris, S. (2011). River Fish Intercalibration Group. WFD Intercalibration Phase 2. Milestone report 6, ECOSTAT, Report to the European Community, 105 p. hal-03303254

R3. Pont, D., Beers, M., Buijse, T., **Delaigue, O.**, Ferrera, T., Jepsen, N., Kovac, V., Schabuss, M., Segurado, P., Schuetz, C. & Vehanen, T. (2009). River Fish Intercalibration Group. WFD Intercalibration Phase 2. Milestone report 1, ECOSTAT, Report to the European Community, 48 p. hal-03303119

R2. Le Coarer, Y. & **Delaigue, O.** (2008). Cypref. Préférences d'habitats des cyprinidés. Projet Maîtrises. Cemagref, Aix-en-Provence, 46 p. hal-03303111

R1. **Delaigue, O.**, Carrel, G. & Pont, D. (2007). Influence de la température sur la croissance des juvéniles de poissons Cyprinidae. Cemagref-EDF, Aix-en-Provence, 38 p. hal-03303111

Technical guide

G1. Reyjol, Y., Spyratos, V., Basilico, L., Archaimbault, V., Argillier, C., Bertrin, V., Boutry, S., Chauvin, C., **Delaigue, O.**, Delmas, F., Dutartre, A., Gevrey, M., Laplace-Treyture, C., Menay, M., Morin, S., Pont, D., Rosebery, J., Usseglio-Poletera, P., Mondy, C., Bouchez, A., Caquet, T., Rimet, F., Roucaute, M., Monnier, O., Stroffek, S. & Genin, B. (2013). *Bioindication : des outils pour évaluer l'état écologique des milieux aquatiques - Perspectives en vue du 2e cycle DCE - Eaux de surface continentales*. Les Rencontres de l'ONEMA. 56 p. hal-02598686

Manuals (latest versions)

M6. Coron, L., **Delaigue, O.**, Thirel, G., Dorchies, D., Perrin, C. & Michel, C. (2022). *airGR: Suite of GR Hydrological Models for Precipitation-Runoff Modelling*. R package version 1.7.0, 102 p, doi: 10.15454/EX11NA.

M5. **Delaigue, O.** (2022). *hydroportail: Retrieve French Hydrological Data from HydroPortail*. R package version 0.1.0.9006, 24 p.

M4. **Delaigue, O.**, Brigode, P. & Thirel, G. (2022) *airGRdatasets: Hydro-Meteorological Catchments Datasets for the 'airGR' Galaxy*. R package version 0.0.0.9000, 5 p.

M3. **Delaigue, O.**, Coron, L. & Brigode, P. (2022). *airGRteaching: Teaching Hydrological Modelling with GR Rainfall-Runoff Models (Shiny Interface Included)*. R package version 0.2.13, 19 p, doi: 10.15454/W0SSKT.

M2. Piazzi, G. & **Delaigue, O.** (2021). *airGRdatassim: Ensemble-Based Data Assimilation in GR Hydrological Models*. R package version 0.1.3, 11 p, doi: 10.15454/WEYYVZ.

M1. Pont, D., **Delaigue, O.** & Sidi, E. (2015). *Programme IPR+. Révision de l'indice poisson rivière pour l'application de la DCE. Manuel utilisateur*. ONEMA-IRSTEA. Partenariat 2014. Mise au point de l'indicateur poisson IPR+. Action 27, Antony, 109 p. hal-03303684

Oral communications

Symposiums

C48. **Delaigue, O.**, Brigode, P., Andréassian, V., Perrin, C., Etchevers, P., Soubeyroux, J.M., Janet, B. & Addor, N. (2022). CAMELS-FR: A large sample hydroclimatic dataset for france to explore hydrological diversity and support model benchmarking. 11th edition of the IAHS Scientific Assembly. International Association of Hydrological Sciences, Montpellier, 29 May - 3 Jun. 2022. hal-03687235 [oral]

C47. **Delaigue, O.**,Dorchies, D. & Thirel, G. (2022). The airGR galaxy: Hydrological tools around GR models. 11th edition of the IAHS Scientific Assembly. International Association of Hydrological Sciences, Montpellier, 29 May - 3 Jun. 2022. hal-03687216 [poster]

C46. Dorchies, D., Bader, J.C., Nunez Torres, L., **Delaigue, O.** & Thirel, G. (2022). Drought and flood risk assessment of the seine basin reservoir management under climate change. 11th edition of the IAHS Scientific Assembly. International Association of Hydrological Sciences, Montpellier, 29 May - 3 Jun. 2022. hal-03696260 [oral]

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[maintainer, developer, writer] [since 2016]

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W2. **Delaigue, O.** & Thirel, G. (2022). *hydroGR: Videos of the Catchment Hydrology research group. INRAE, Antony*. `https://www.youtube.com/channel/UCrCKcApODCgYuCAsp0JoT3w/playlists`.
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W1. Ramos, M.H., Thirel, G. & **Delaigue, O.** (2022). *webGR: Catchment Hydrology research group, INRAE Antony*. `https://webgr.inrae.fr/`.
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