

## 1. Publications in peer-reviewed scientific journals

For publications of my post-doctoral time, I describe my contribution.

### 1.a. Post-doctoral publications

**Aubert, A.H.**, Schmid, S., Beutler, P., Lienert, J. (**in preparation**). *Sustainable wastewater management: A snapshot of what future decision-makers in Switzerland know and think is important*, ENVIRON SCI TECHNOL targeted

I had the original idea, conceived the study, interpreted the results and am lead author.

**Aubert, A.H.**, Lienert, J. (**in preparation**). *Citizens' participation in OR processes: review and needs*, EUR J OPER RES targeted

I had the original idea, created the message of the paper and am lead author.

Haag, F., **Aubert, A.H.**, Lienert, J. (**in preparation**). *Supporting environmental decisions with multiple objectives, multiple stakeholders, and uncertainty with the ValueDecisions web app*, ENVIRON MODELL SOFTW targeted

I developed the usability test, supervised the data analysis, carried out the exemplary case analysis, and wrote the related sections.

**Aubert, A.H.**, McConville, J., Schmid, S., Lienert, J. (**submitted**). *Playing cards to generate objectives: promising results of a pre-test*,

I had the original idea, conceived the serious game, supervised the development, the experimental plan, and data analysis, and am lead author.

**Aubert, A.H.**, Lienert, J., von Helversen, B. (**submitted**). *Gamified environmental Multi-Criteria Decision Analysis: Information on objectives and range insensitivity bias*,

I have conceived the tool, and the assessment study, performed most of the analysis, interpreted the results, and am lead author.

**Aubert, A.H.**, Friedrich, M. (**2021**). *Gamifying quantitative face-to-face interviews in rural India: An empirical evaluation based on the basic psychological needs theory*, PLOS ONE, 16(1), e0244077. <https://doi.org/10.1371/journal.pone.0244077>

I have conceived the assessment study of the gamification part, and am lead author.

Nardi, F., Cudennec, C., Abrate, T., Allouch, C., Annis, A., Assumpção, T.H., **Aubert, A.H.**, Berod, D., Braccini, A.M., Buytaert, W., Dasgupta, A., Hannah, D.M., Mazzoleni, M., Polo, M.J., Sæbø, Ø., Seibert, J., Tauro, F., Teichert, F., Teutonico, R., Uhlenbrook, S., Wahrmann Vargas, C., Grimaldi, S. (**2020**). *Citizens AND HYdrology (CANDHY): conceptualizing a transdisciplinary framework for citizen science addressing hydrological challenges* HYDROLOGICAL SCIENCES JOURNAL.

<https://doi.org/10.1080/02626667.2020.1849707>

I significantly commented each version of the paper, and rewrote some sections.

**Aubert, A.H.**, Esculier, F., Lienert, J. (**2020**). *Recommendations for online elicitation of swing weights from citizens in environmental decision-making*, ORP, 7, 100156. <https://doi.org/10.1016/j.orp.2020.100156>

I have conceived the study, designed and performed the analysis, interpreted the results and was lead author of writing and reviewing.

**Aubert, A.H.**, Medema, W., & Wals, A.E.J. (**2019**). *Towards a framework for designing and assessing game-based approaches for sustainable water governance*, WATER-SUI, 11(4), 869-888. <https://doi.org/10.3390/w11040869>

I initiated the original idea and message of the paper and was lead author.

**Aubert, A. H., & Lienert, J. (2019).** *Gamified online survey to elicit citizens' preferences and enhance learning for environmental decisions*, ENVIRON MODELL SOFTW, 111, 1-12. <https://doi.org/10.1016/j.envsoft.2018.09.013>

I have conceived the study, designed and performed the analysis, interpreted the results and was lead author of writing and reviewing.

**Aubert, A.H., Bauer, R., Lienert, J. (2018).** *A review of water-related serious games to specify use in environmental Multi-Criteria Decision Analysis*, ENVIRON MODELL SOFTW, 105, 64-78. <https://doi.org/10.1016/j.envsoft.2018.03.023>

I have conceived the study, designed and performed the analysis, interpreted the results and was lead author of writing and reviewing.

Rode, M., Wade, A., Cohen, M., Hensley, R., Bowes, M., Kirchner, J., Arhonditsis, G., Jordan, P., Kronvang, B., Halliday, S., Skeffington, R., Rozemeijer, J., **Aubert, A.H.**, Rinke, K., Jomaa, S. (2016) *Sensors in the stream: the high-frequency wave of the present*, ENVIRON SCI TECHNOL, 50(19). <http://dx.doi.org/10.1021/acs.est.6b02155>

This paper is the outcome of an International Workshop on temporal high resolution water quality monitoring and analysis, held on 21<sup>st</sup>-22<sup>nd</sup> of July 2014 at the Helmholtz Centre for Environmental Research – UFZ Magdeburg (Germany). I was involved in the workshop and in the writing and reviewing of the publication.

**Aubert, A.H., Thrun, M.C., Breuer, L., Ultsch A. (2016)** *Knowledge discovery from high-frequency stream nitrate concentrations: hydrology and biology contributions*, SCI REP, 6, 31536. <http://dx.doi.org/10.1038/srep31536>

I have developed the goals of this study, initiated the collaboration, interpreted the results and was lead author of writing and reviewing.

**Aubert, A.H., Breuer, L. (2016)** *New seasonal shift in in-stream diurnal nitrate cycles identified by mining high-frequency data*, PLOS ONE, 11(4). <http://dx.doi.org/10.1371/journal.pone.0153138>

I have conceived the study, designed and performed the analysis, interpreted the results and was lead author of writing and reviewing.

Breuer, L., Hiery, N., Kraft, P., Bach, M., **Aubert, A.H.**, Frede, H.-G. (2015) *HydroCrowd: a citizen science snapshot to access the spatial control of nitrogen solutes in surface waters*, SCI REP, 5, 16503. <http://dx.doi.org/10.1038/srep16503>

I have written the paper based on results of a Master thesis, while doing this I contributed to improvements in the data analysis. I was involved in the review process.

### 1.b. Publications resulting from PhD

**Aubert, A.H., Gascuel-Oudou, C. and Merot, Ph. (2015)** *Motifs temporels de qualité de l'eau, analyse guidée par une décennie de données haute-fréquence mesurées dans un observatoire agro-hydrologique*, HOUILLE BLANCHE, 6, 5-11. <http://dx.doi.org/10.1051/lhb/20150062>

**Aubert, A.H., Kirchner, J.W., Gascuel-Oudou, C., Faucheux, M., Gruau, G. and Merot, P. (2014)** *Fractal water quality fluctuations spanning the periodic table in an intensively farmed watershed*, ENVIRON SCI TECHNOL, 48(2), 930-937. <http://dx.doi.org/10.1021/es403723r>

**Aubert, A.H., Tavenard, R., Emonet, R., de Lavenne, A., Malinowski, S., Guyet, T., Quiniou, R., Odobez, J.-M., Merot, P. and Gascuel-Oudou, C. (2013)** *Clustering flood events from water quality time-series using Latent Dirichlet Allocation model*, WATER RESOUR RES, 49(12), 8187-8199. <http://dx.doi.org/10.1002/2013WR014086>

**Aubert, A. H.**, Gascuel-Oudou, C., Gruau, G., Akkal, N., Faucheux, M., Grimaldi, C., Hamon, Y., Jaffrezic, A., Lecoq-Boutnik, M., Molenat, J., Petitjean, P., Ruiz, L. and Merot, P. (2013) *Solute transport dynamics in small, shallow groundwater-dominated agricultural catchments: insights from a high-frequency, multisolute 10 yr-long monitoring study*, HYDROL EARTH SYST SC, 17(4), 1379 - 1391. <http://dx.doi.org/10.5194/hess-17-1379-2013>

**Aubert, A. H.**, Gascuel-Oudou, C. and Merot P. (2013) *Annual hysteresis of water quality: A method to analyse the effect of intra- and inter-annual climatic conditions*, J HYDROL, 478, 29-39. <http://dx.doi.org/10.1016/j.jhydrol.2012.11.027>

## 2. Contributions to books

Salmon-Monviola, J., **Aubert, A. H.**, Gascuel-Oudou, C., Durand, P., and Ruiz, L. (2012) *Le cycle de l'azote, les flux et concentrations en nitrate des cours d'eau: chroniques passées et projections, in Changement climatique dans l'Ouest: évaluation, impacts, perceptions*, edited by P. Merot, P. Dubreuil, D. Delahaye and P. Desnos, pp. 217-228, Presses Universitaires de Rennes, Rennes.

## 3. Oral contributions to conferences and invited lecture

**Aubert, A.H.**, *Gamifying online survey to elicit laypersons' preferences for Multi-Criteria Decision Analysis*, In bi-weekly seminar, Perswade/University of Technology Sydney (Sydney (Australia), 12/11/2020, online) (Invited)

**Aubert, A.H.**, *Gamifying online survey to elicit laypersons' preferences for Multi-Criteria Decision Analysis*, In Weekly seminar, Irene/Unine (Neuchâtel (Switzerland), planned 24/04/2020 postponed to 25/09/2020 due to the Covid-19 crisis) (Invited)

**Aubert, A. H.**, Lienert, J., *Eliciting citizens' preferences to support decision-making about wastewater management: Evaluation of a gamified online survey*, In iEMSs2020, session A4 Interactive tools and visualization to support environmental decision-making (oral presentation + main session convener, Brussels (Belgium), planned 06–10/07/2020 postponed to 14–18/09/2020 due to the Covid-19 crisis, online)

**Aubert, A. H.**, *Edanaga: Environmental decision analysis with serious games*, In Workshop Environmental Social Sciences: Current Issues and Future Perspectives, (Bern (Switzerland), 26–28/08/2020)

**Aubert, A.H.**, *Gamifying to empower citizens in environmental decision-making*, In 4<sup>th</sup> gamification and serious game symposium (GSGS'19) (Neuchâtel (Switzerland), 4–5/06/2019)

**Aubert, A.H.**, Lienert, J., *Weight elicitation for many laypersons who cannot come together: gamifying online survey*, In 19<sup>th</sup> International Conference on Group Decision and Negotiation, joint GDN/BOR meeting (Loughborough (Great Britain), 11–15/06/2019)

**Aubert, A.H.**, *Edanaga: environmental decision analysis with gamification and serious games*, In ForDev internal seminar, USYS, ETHZ (Zürich (Switzerland), 18/05/2019) (Invited)

**Aubert, A.H.**, *Environmental decision-making and serious games*, In IEE Seminar series, Enac, EPFL (Lausanne (Switzerland), 07/05/2019) (Invited)

**Aubert, A. H.**, Lienert, J., *Online weight elicitation: is there really an issue?*, In EURO 2018 (Valencia (Spain), 8–11/07/2018)

- Aubert, A. H.**, Lienert, J., *Preference construction for environmental MCDA: Learning to make informed decisions*, In 1st winter meeting of EURO Working Group on Behavioral OR (EWG-BOR) (poster flash) (Dübendorf (Switzerland), 29–30/01/**2018**)
- Aubert, A.H.**, *Analyse de décisions et environnement: un jeu d'équilibre(s)*, In Réunion de l'axe de recherche AGILE de l'UMR Inra–Agrocampus Ouest 1069 (Rennes (France), 18/12/**2017**)
- Aubert, A. H.**, Lienert, J., *Decision-making: a serious game!*, In Eawag Symposium 2017 (Dübendorf (Switzerland), 15/09/**2017**)
- Aubert, A. H.**, Lienert, J., *Environmental Decision Analysts: Let's be playful!*, In IFORS 2017 (Québec (Canada), 17–21/07/**2017**)
- Aubert, A. H.**, Lienert, J., *Participatory environmental decision-making: let's play a serious game!*, In Eawag Symposium 2016 (poster flash) (Dübendorf (Switzerland), 15/09/**2016**)
- Aubert, A. H.**, Lienert, J., *Serious games in environmental MCDA: enhancing preference construction and citizen involvement*, In 28th European Conference on Operational Research (Poznan (Poland), 3–6/07/**2016**)
- Aubert, A. H.**, Lienert, J., *Constructing preferences: let's play a serious game!*, In Summer School on Behavioural Operational Research (Espoo (Finland), 15–22/05/**2016**)
- Aubert, A.H.**, Kirchner, J., Tavenard, R., Fovet, O., Merot, Ph. and Gascuel-Oudou, C., *Transdisciplinary approaches to analysing hydro chemical time series: get a new look at data*, In International workshop on temporal high-resolution water quality monitoring and analysis (Magdeburg (Germany), 20–21/07/**2014**)
- Aubert, A.H.**, Kirchner, J., Faucheux, M., Merot, Ph. and Gascuel-Oudou, C., *Long-term, high-frequency water quality monitoring in an agricultural catchment: insights from spectral analysis*. In EGU General Assembly 2013, session: "HS2.3 - Monitoring Strategies: temporal trends in groundwater and surface water quality and quantity" (Vienna (Austria), 7–12/4/**2013**)
- Aubert, A.H.**, Mérot, P. and Gascuel-Oudou, C., *Describing annual water quality cycle and its inter-annual variations in agricultural headwater catchment (Kervidy-Naizin, France)*. In 2ème rencontres Réseau des Bassins Versants, session "Observations long terme: acquisitions, traitements et interprétations" (Strasbourg (France), 22–23/09/**2011**)
- Aubert, A.H.** *Qualité des eaux et variabilité climatique sur Naizin*, In : Assemblée générale de l'ORE Agrhys (Rennes (France), 22/03/**2011**)

#### 4. Outreach activities (e.g. public engagement in science, technology and knowledge transfer activities, etc.)

Focus group workshop with students (preparation and moderation), *Gamifying information on objectives to fulfil for wastewater management in a rural Swiss case*, ZHdK Game Design seminar (Zürich (Switzerland), 29/04/2019)

Eawag News article, *Gaming route leads to solid results*, [[www.eawag.ch/en/news-agenda/news-portal/news-detail/mit-einer-spielerischen-app-zur-fundierten-entscheidung/](http://www.eawag.ch/en/news-agenda/news-portal/news-detail/mit-einer-spielerischen-app-zur-fundierten-entscheidung/)], (Dübendorf (Switzerland), 19/12/2018)

Stakeholder workshop (moderation), First FANFAR workshop (Reinforced cooperation to provide Operational flood forecasting and alerts in West Africa), Agrhymet, (Niamey (Niger), 17–21/09/2018)

Focus group workshop with students (preparation and moderation), *Testing gamified interview tool for Multi-Criteria Decision Analysis 2*, ZHdK Game Design seminar (Zürich (Switzerland), 22/03/2017)

Focus group workshop with students (preparation and moderation), *Testing gamified interview tool for Multi-Criteria Decision Analysis*, ZHdK Game Design seminar (Zürich (Switzerland), 23/11/2016)

Stakeholder workshop (preparation and moderation), OCAPI-Wings Paris: *Objectifs et options pour la gestion des urine et fèces des nouvelles constructions du Grand Paris*, Colloque ARCEAU (Paris (France), 21/07/2016)

Serious game (creation and use), *Travelling with N through the hillslope*, EU Water Day of Maria-Ward-Schule (Bad Homburg (Germany), 12/06/2015).

EGU Education Planet Press (geoscientific news for children) about hydrology (review and translation), [<http://www.egu.eu/education/planet-press/>] (2014–2016)

Science talk, selected for Paris regional Fame Lab competition, [<https://www.youtube.com/watch?v=ATPlYtXW9M4>] (Paris (France), 17/03/2014)

12 columns aimed for a radio diffusion for Michel Cabaret, director of Espace des Sciences, La Science en Question broadcast, France Bleu Armorique radio (Rennes (France), 10/2013)

Short documentary, in collaboration with Espace des sciences, *Les nitrates au fil de l'eau*, [<http://www.espace-sciences.org/explorer/videos/les-nitrates-au-fil-de-l-eau>] (Rennes (France), 09/2012)

Short documentary, *Augustine et la goutte d'eau*, presented in the Science Festival Sciences en cour[t]s dedicated to PhD student research, [[http://www.sciences-encourts.fr/?page\\_id=1168](http://www.sciences-encourts.fr/?page_id=1168)] (Rennes (France), 04/2012)

Animation on water quality and agriculture after creating the activities, for the French National Institute for Agronomic research, at the International Agriculture Fair (SIA) 2012 (Paris (France), 02/2012)

Radio talk on agro-hydrology for the Labomatik broadcast, on RadioCampusRennes (Université de Rennes1 radio), [<http://www.radiocampusrennes.fr/labm/podcast-9191>] (Rennes (France), 02/2012)

Web journalism for a website about environment in Brittany (GIP Bretagne Environnement, Rennes (France)), writing the section on waste, [<http://www.bretagne-environnement.org/Dechets>] (09/2007–02/2008)

### **5. Other artefacts with documented use**

Browser based gamified survey for Multi-Criteria Decision Analysis weight elicitation (upgrade and combination of the previous two gamified applications from 2018 and 2016), under development, expected 09/**2021** (link to be released when paper published). Concept: **Aubert, A.H.**; Development: Entrée de Jeux, société coopérative. MIT license.

Browser based application to elicit weights given to objectives for Multi-Criteria Decision Analysis (generalization of the previous from 2018), under development, expected 04/**2021** (link to be released when paper published). Concept: **Aubert, A.H.**; Development: Masson A. (Youmi). MIT license.

Browser based gamified application to provide information about objectives for a wastewater management decision-making in rural Switzerland, available online since 10/**2018** (link to be released when paper published – currently submitted). Concept: **Aubert, A.H.**; Development: OpinionGames GmbH. MIT license.

Browser based application to elicit weights given to objectives for a wastewater management decision-making in rural Switzerland, available online since 11/**2018** (link to be released when paper published – currently submitted). Concept: **Aubert, A.H.**; Development: Sahandabadi A. (Eawag). MIT license.

Eawag Survey App, available on the App Store (for iOS devices) since 12/**2016**. Prototype of an innovative gamified Multi-Criteria Decision Analysis survey tool for weight elicitation. Concept: **Aubert, A.H.**; Development: Takomat GmbH.