

Emanuel Dutra – *Curriculum Vitae* (June 2017)

Personal details

Name	Emanuel Nemésio de Sousa Dutra
E-mail	endutra@fc.ul.pt
Nationality	Portuguese
Date of Birth	19/12/1983
Web page	https://sites.google.com/view/emanueldutra

Main fields of research

I am a researcher at [Instituto Dom Luiz](#), [Faculty of Sciences of Lisbon University](#). My main research focus is on land surface processes and the importance of the land surface within earth system models and meteorological forecasting systems. In particular I am interested in modelling of land surface processes, large scale hydrology, land surface drivers on sub-seasonal to seasonal atmospheric predictability, drought monitoring and forecasting and the role of the land surface in climate projections.

Digital identifiers

- Researcher ID: **A-3774-2010**: <http://www.researcherid.com/rid/A-3774-2010>
 - 45 publications with 1018 citations (average of 23 citation per article), h-index: 17
- Scopus ID **25926243900**: <http://www.scopus.com/authid/detail.url?authorId=25926243900>
 - 47 documents with 1078 citations, h-index: 18
- Orcid ID : **0000-0002-0643-2643**: <http://orcid.org/0000-0002-0643-2643>
- Google scholar <https://scholar.google.pt/citations?user=pSLSRM8AAAAJ&hl=pt-PT&oi=ao>

Education

PhD in Meteorology 2008-2011

- University of Lisbon, Faculty of Sciences and visiting the Institute for Atmospheric and Climate Science, ETH, Zurich.
- Thesis: Global land-atmosphere coupling associated with cold climate processes.
- Supervision: Prof. Pedro Miranda (University of Lisbon), Dr. Pedro Viterbo (Portuguese weather service) and Prof. Christoph Schär (IAC, ETH Zurich).
- URI: <http://hdl.handle.net/10451/4167>

Master in Geophysical Sciences 2006-2007

- University of Lisbon, Faculty of Sciences.
- Classification: 18 (0-20)

Bachelor in Meteorology Oceanography and Geophysics 2001-2006

- University of Lisbon, Faculty of Sciences.
- 4 years + 1 year basic training (thesis: Iberian Peninsula Hydrology: Some applications).

- Classification: 17 (0-20).

Career Summary

January 2017- Present

Instituto Dom Luiz, Faculty of Sciences, University of Lisbon (Portugal)

Researcher (Investigador FCT)

March 2011 – December 2016

European Centre for Medium-Range Weather Forecasts, Reading (United Kingdom)

Scientist

January 2008 – February 2011

Faculty of Sciences, University of Lisbon (Portugal)

PhD student

September 2008 – December 2008 and January 2010 – July 2010

Institute for atmospheric and climate sciences, ETH, Zurich (Switzerland)

Visiting PhD student

September 2006 – December 2007

Faculty of Sciences, University of Lisbon (Portugal)

Scientific Initiation grant

Teaching and outreach

2017	PhD supervisor of David Stevens (Land-atmosphere water, energy and carbon cycles)
2017	Graduate supervisor of Bárbara Delgado (Estimating the Environmental lapse-rate using observations)
2017	Post-graduate course (doctoral program): EarthSystems
2015	Land-surface: snow: ECMWF training course on Parameterization of diabatic and subgrid processes.
2012-2015	Application of the ensemble prediction system to drought forecasting: ECMWF training course on predictability, diagnostics and extended-range forecasting.
2011-2015	Land surface practical exercises: ECMWF training course on Parameterization of diabatic and subgrid processes.
2012	Presentation of GLOWASIS project in the 2 th FP7 Space Conference, Larnaca Cyprus.
2012	Seasonal forecasts of meteorological droughts: Use and interpretation of ECMWF Products in WMO National Meteorological and Hydrological Services (course code OP-WMO). Web-seminar.

Awards

<u>2009</u>	Gulbenkian prize for Research Incentive - Fundação Calouste Gulbenkian
<u>2005/2006</u>	Merit grant for students with average classification higher than 16 (University of Lisbon)
<u>2002</u>	Second prize of the students in the first year with higher classifications in the Faculty of Sciences, University of Lisbon

Other scientific activities

- Convener of the “Large-scale hydrology” session in the EGU General Assembly 2015/2016.
- Guest editor in the research topic “Circulation Weather types as a tool in atmospheric, climate and environmental research” in Frontiers (2014-2015).
- Jury member of a PhD thesis in Évora University (Portugal-2013: Remote sensing and in situ determination of physical and micro-biological parameters of inland waters and its application on lake-atmosphere modelling)
- Reviewer for: Geophysical Research letters, Journal of climate, Hydrology and Earth system Sciences, Tellus A, Meteorological Applications, Climate Dynamics, Journal of Geophysical Research, Journal of Hydrometeorology, Bulletin of the American Meteorological Society, Geoscientific Model Development.
- Project reviewer for proposal to the Portuguese Polar Program (PROPOLAR) 2015.
- Project reviewer for proposals to the French Polar Institute for the 2013/2014 polar campaigns.
- Project reviewer for proposals to the Netherlands Polar Program 2014.
- Project reviewer for the National Oceanic and Atmospheric Administration (2017)
- Member of AGU since 2008
- Member of EGU since 2015

Languages

Portuguese (mother tongue)

English: Excellent (Read, Write, Speak)

Participation in Projects

Earth2Observe: Global Earth Observation for Integrated Water Resource Assessment, EU-FP7, 2014-2016. Involved in the project preparation and submission. Coordination of a work-package working on the development of a multi-model water resources reanalysis.

SPECS: Seasonal-to-decadal climate Prediction for the improvement of European Climate Services, EU FP7, 2014

GLOWASIS: A collaborative project aimed at pre-validation of a GMES Global Water Scarcity Information Service, EU FP7, 2011-2012

DEWFORA: Improved Drought Early Warning and FORecasting to strengthen preparedness and adaptation to droughts in Africa, EU FP7, 2011-2013. Coordination of a work-package working on seasonal forecasts of droughts.

EC-EARTH: Consortium, 2009 – 2011

SnowMIP2: Snow Model Intercomparison Project for forest snow processes (2008/2009)

Publications

Peer review

1. Orth, R., **Dutra, E.**, Trigo, I. F., and Balsamo, G., *Advancing land surface model development with satellite-based Earth observations*. Hydrol. Earth Syst. Sci., **2017**. 21, 2483-2495, doi:[10.5194/hess-21-2483-2017](https://doi.org/10.5194/hess-21-2483-2017).
2. Wegmann, M., Y. Orsolini, **E. Dutra**, O. Bulygina, A. Sterin, and S. Brönnimann, *Eurasian snow depth in long-term climate reanalyses*. The Cryosphere, **2017**. 11(2): p. 923-935, doi:[10.5194/tc-11-923-2017](https://doi.org/10.5194/tc-11-923-2017).
3. Beljaars, A., **E. Dutra**, G. Balsamo, and F. Lemarié, *On the numerical stability of surface-atmosphere coupling in weather and climate models*. Geosci. Model Dev., **2017**. 10(2): p. 977-989, doi:[10.5194/gmd-10-977-2017](https://doi.org/10.5194/gmd-10-977-2017).
4. Zsótér, E., F. Pappenberger, P. Smith, R.E. Emerton, E. Dutra, F. Wetterhall, D. Richardson, K. Bogner, and G. Balsamo, *Building a Multimodel Flood Prediction System with the TIGGE Archive*. Journal of Hydrometeorology, **2016**. 17(11): p. 2923-2940, doi:[10.1175/jhm-d-15-0130.1](https://doi.org/10.1175/jhm-d-15-0130.1).
5. Trigg, M.A., C.E. Birch, J.C. Neal, P.D. Bates, A. Smith, C.C. Sampson, D. Yamazaki, Y. Hirabayashi, F. Pappenberger, **E. Dutra**, P.J. Ward, H.C. Winsemius, P. Salamon, F. Dottori, R. Rudari, M.S. Kappes, A.L. Simpson, G. Hadzilacos, and T.J. Fewtrell, *The credibility challenge for global fluvial flood risk analysis*. Environmental Research Letters, **2016**. 11(9): p. 094014, doi:[10.1088/1748-9326/11/9/094014](https://doi.org/10.1088/1748-9326/11/9/094014).
6. Senan, R., Y.J. Orsolini, A. Weisheimer, F. Vitart, G. Balsamo, T.N. Stockdale, **E. Dutra**, F.J. Doblas-Reyes, and D. Basang, *Impact of springtime Himalayan-Tibetan Plateau snowpack on the onset of the Indian summer monsoon in coupled seasonal forecasts*. Climate Dynamics, **2016**. 47(9-10): p. 2709-2725, doi:[10.1007/s00382-016-2993-y](https://doi.org/10.1007/s00382-016-2993-y).
7. Rodríguez-Fernández, N., Y. Kerr, R. van der Schalie, A. Al-Yaari, J.-P. Wigneron, R. de Jeu, P. Richaume, **E. Dutra**, A. Mialon, and M. Drusch, *Long Term Global Surface Soil Moisture Fields Using an SMOS-Trained Neural Network Applied to AMSR-E Data*. Remote Sensing, **2016**. 8(11): p. 959, doi:[10.3390/rs8110959](https://doi.org/10.3390/rs8110959).
8. Prodhomme, C., F. Doblas-Reyes, O. Bellprat, and **E. Dutra**, *Impact of land-surface initialization on sub-seasonal to seasonal forecasts over Europe*. Climate Dynamics, **2016**. 47(3): p. 919-935, doi:[10.1007/s00382-015-2879-4](https://doi.org/10.1007/s00382-015-2879-4).
9. Orth, R., **E. Dutra**, and F. Pappenberger, *Improving Weather Predictability by Including Land Surface Model Parameter Uncertainty*. Monthly Weather Review, **2016**. 144(4): p. 1551-1569, doi:[10.1175/Mwr-D-15-0283.1](https://doi.org/10.1175/Mwr-D-15-0283.1).
10. Agustí-Panareda, A., S. Massart, F. Chevallier, G. Balsamo, S. Boussetta, **E. Dutra**, and A. Beljaars, *A biogenic CO₂ flux adjustment scheme for the mitigation of large-scale biases in global atmospheric CO₂ analyses and forecasts*. Atmos. Chem. Phys., **2016**. 16(16): p. 10399-10418, doi:[10.5194/acp-16-10399-2016](https://doi.org/10.5194/acp-16-10399-2016).
11. Wetterhall, F., H.C. Winsemius, **E. Dutra**, M. Werner, and E. Pappenberger, *Seasonal predictions of agro-meteorological drought indicators for the Limpopo basin*. Hydrol. Earth Syst. Sci., **2015**. 19(6): p. 2577-2586, doi:[10.5194/hess-19-2577-2015](https://doi.org/10.5194/hess-19-2577-2015).
12. Trambauer, P., M. Werner, H.C. Winsemius, S. Maskey, **E. Dutra**, and S. Uhlenbrook, *Hydrological drought forecasting and skill assessment for the Limpopo River basin, southern Africa*. Hydrol. Earth Syst. Sci., **2015**. 19(4): p. 1695-1711, doi:[10.5194/hess-19-1695-2015](https://doi.org/10.5194/hess-19-1695-2015).
13. Ramos, A.M., D. Barriopedro, and **E. Dutra**, *Circulation Weather types as a tool in atmospheric, climate and environmental research*. Frontiers in Environmental Science, **2015**. 3, doi:[10.3389/fenvs.2015.00044](https://doi.org/10.3389/fenvs.2015.00044).
14. Pappenberger, F., G. Jendritzky, H. Staiger, **E. Dutra**, F. Di Giuseppe, D.S. Richardson, and H.L. Cloke, *Global forecasting of thermal health hazards: the skill of probabilistic predictions of the Universal Thermal Climate Index (UTCI)*. International Journal of Biometeorology, **2015**. 59(3): p. 311-323, doi:[10.1007/s00484-014-0843-3](https://doi.org/10.1007/s00484-014-0843-3).
15. Enenkel, M., L.D. See, R. Bonifacio, V. Boken, N. Chaney, P. Vinck, L.Z. You, **E. Dutra**, and M. Anderson, *Drought and food security - Improving decision-support via new technologies and innovative collaboration*. Global Food Security-Agriculture Policy Economics and Environment, **2015**. 4: p. 51-55, doi:[10.1016/j.gfs.2014.08.005](https://doi.org/10.1016/j.gfs.2014.08.005).

16. Boussetta, S., G. Balsamo, **E. Dutra**, A. Beljaars, and C. Albergel, *Assimilation of surface albedo and vegetation states from satellite observations and their impact on numerical weather prediction*. Remote Sensing of Environment, **2015**. 163(0): p. 111-126, doi:[10.1016/j.rse.2015.03.009](https://doi.org/10.1016/j.rse.2015.03.009).
17. Balsamo, G., C. Albergel, A. Beljaars, S. Boussetta, E. Brun, H. Cloke, D. Dee, **E. Dutra**, J. Muñoz-Sabater, F. Pappenberger, P. de Rosnay, T. Stockdale, and F. Vitart, *ERA-Interim/Land: a global land surface reanalysis data set*. Hydrol. Earth Syst. Sci., **2015**. 19(1): p. 389-407, doi:[10.5194/hess-19-389-2015](https://doi.org/10.5194/hess-19-389-2015).
18. Albergel, C., **E. Dutra**, J. Muñoz-Sabater, T. Haiden, G. Balsamo, A. Beljaars, L. Isaksen, P. de Rosnay, I. Sandu, and N. Wedi, *Soil temperature at ECMWF: An assessment using ground-based observations*. Journal of Geophysical Research: Atmospheres, **2015**. 120(4): p. 1361-1373, doi:[10.1002/2014jd022505](https://doi.org/10.1002/2014jd022505).
19. Winsemius, H.C., **E. Dutra**, F.A. Engelbrecht, E. Archer Van Garderen, F. Wetterhall, F. Pappenberger, and M.G.F. Werner, *The potential value of seasonal forecasts in a changing climate in southern Africa*. Hydrol. Earth Syst. Sci., **2014**. 18(4): p. 1525-1538, doi:[10.5194/hess-18-1525-2014](https://doi.org/10.5194/hess-18-1525-2014).
20. Trambauer, P., **E. Dutra**, S. Maskey, M. Werner, F. Pappenberger, L.P.H. van Beek, and S. Uhlenbrook, *Comparison of different evaporation estimates over the African continent*. Hydrol. Earth Syst. Sci., **2014**. 18(1): p. 193-212, doi:[10.5194/hess-18-193-2014](https://doi.org/10.5194/hess-18-193-2014).
21. Naumann, G., **E. Dutra**, P. Barbosa, F. Pappenberger, F. Wetterhall, and J.V. Vogt, *Comparison of drought indicators derived from multiple data sets over Africa*. Hydrol. Earth Syst. Sci., **2014**. 18(5): p. 1625-1640, doi:[10.5194/hess-18-1625-2014](https://doi.org/10.5194/hess-18-1625-2014).
22. Mwangi, E., F. Wetterhall, **E. Dutra**, F. Di Giuseppe, and F. Pappenberger, *Forecasting droughts in East Africa*. Hydrol. Earth Syst. Sci., **2014**. 18(2): p. 611-620, doi:[10.5194/hess-18-611-2014](https://doi.org/10.5194/hess-18-611-2014).
23. Getirana, A.C.V., **E. Dutra**, M. Guimberteau, J. Kam, H.-Y. Li, B. Decharme, Z. Zhang, A. Ducharne, A. Boone, G. Balsamo, M. Rodell, A.M. Toure, Y. Xue, C.D. Peters-Lidard, S.V. Kumar, K. Arsenault, G. Drapeau, L. Ruby Leung, J. Ronchail, and J. Sheffield, *Water Balance in the Amazon Basin from a Land Surface Model Ensemble*. Journal of Hydrometeorology, **2014**. 15(6): p. 2586-2614, doi:[10.1175/JHM-D-14-0068.1](https://doi.org/10.1175/JHM-D-14-0068.1).
24. **Dutra, E.**, F. Wetterhall, F. Di Giuseppe, G. Naumann, P. Barbosa, J. Vogt, W. Pozzi, and F. Pappenberger, *Global meteorological drought – Part 1: Probabilistic monitoring*. Hydrol. Earth Syst. Sci., **2014**. 18(7): p. 2657-2667, doi:[10.5194/hess-18-2657-2014](https://doi.org/10.5194/hess-18-2657-2014).
25. **Dutra, E.**, W. Pozzi, F. Wetterhall, F. Di Giuseppe, L. Magnusson, G. Naumann, P. Barbosa, J. Vogt, and F. Pappenberger, *Global meteorological drought – Part 2: Seasonal forecasts*. Hydrol. Earth Syst. Sci., **2014**. 18(7): p. 2669-2678, doi:[10.5194/hess-18-2669-2014](https://doi.org/10.5194/hess-18-2669-2014).
26. Pozzi, W., J. Sheffield, R. Stefanski, D. Cripe, R. Pulwarty, J.V. Vogt, R.R. Heim, M.J. Brewer, M. Svoboda, R. Westerhoff, A.I.J.M. van Dijk, B. Lloyd-Hughes, F. Pappenberger, M. Werner, **E. Dutra**, F. Wetterhall, W. Wagner, S. Schubert, K. Mo, M. Nicholson, L. Bettio, L. Nunez, R. van Beek, M. Bierkens, L.G.G. de Goncalves, J.G.Z. de Mattos, and R. Lawford, *Toward Global Drought Early Warning Capability: Expanding International Cooperation for the Development of a Framework for Monitoring and Forecasting*. Bulletin of the American Meteorological Society, **2013**. 94(6): p. 776-785, doi:[10.1175/bams-d-11-00176.1](https://doi.org/10.1175/bams-d-11-00176.1).
27. **Dutra, E.**, L. Magnusson, F. Wetterhall, H.L. Cloke, G. Balsamo, S. Boussetta, and F. Pappenberger, *The 2010–2011 drought in the Horn of Africa in ECMWF reanalysis and seasonal forecast products*. International Journal of Climatology, **2013**. 33(7): p. 1720-1729, doi:[10.1002/joc.3545](https://doi.org/10.1002/joc.3545).
28. **Dutra, E.**, M. Diamantakis, I. Tsonevsky, E. Zsoter, F. Wetterhall, T. Stockdale, D. Richardson, and F. Pappenberger, *The extreme forecast index at the seasonal scale*. Atmospheric Science Letters, **2013**. 14(4): p. 256-262, doi:[10.1002/asl2.448](https://doi.org/10.1002/asl2.448).
29. **Dutra, E.**, F. Di Giuseppe, F. Wetterhall, and F. Pappenberger, *Seasonal forecasts of droughts in African basins using the Standardized Precipitation Index*. Hydrol. Earth Syst. Sci., **2013**. 17(6): p. 2359-2373, doi:[10.5194/hess-17-2359-2013](https://doi.org/10.5194/hess-17-2359-2013).
30. Di Giuseppe, F., F. Molteni, and **E. Dutra**, *Real-time correction of ERA-Interim monthly rainfall*. Geophysical Research Letters, **2013**. 40(14): p. n/a-n/a, doi:[10.1002/grl.50670](https://doi.org/10.1002/grl.50670).

31. Boussetta, S., G. Balsamo, A. Beljaars, A.-A. Panareda, J.-C. Calvet, C. Jacobs, B. van den Hurk, P. Viterbo, S. Lafont, **E. Dutra**, L. Jarlan, M. Balzarolo, D. Papale, and G. van der Werf, *Natural land carbon dioxide exchanges in the ECMWF integrated forecasting system: Implementation and offline validation*. Journal of Geophysical Research: Atmospheres, **2013**. 118(12): p. 5923-5946, doi:[10.1002/jgrd.50488](https://doi.org/10.1002/jgrd.50488).
32. Alfieri, L., P. Burek, **E. Dutra**, B. Krzeminski, D. Muraro, J. Thielen, and F. Pappenberger, *GloFAS- global ensemble streamflow forecasting and flood early warning*. Hydrol. Earth Syst. Sci., **2013**. 17(3): p. 1161-1175, doi:[10.5194/hess-17-1161-2013](https://doi.org/10.5194/hess-17-1161-2013).
33. Yamazaki, D., H. Lee, D.E. Alsdorf, **E. Dutra**, H. Kim, S. Kanae, and T. Oki, *Analysis of the water level dynamics simulated by a global river model: A case study in the Amazon River*. Water Resour. Res., **2012**. 48(9): p. W09508, doi:[10.1029/2012wr011869](https://doi.org/10.1029/2012wr011869).
34. Pappenberger, F., **E. Dutra**, F. Wetterhall, and H.L. Cloke, *Deriving global flood hazard maps of fluvial floods through a physical model cascade*. Hydrol. Earth Syst. Sci., **2012**. 16(11): p. 4143-4156, doi:[10.5194/hess-16-4143-2012](https://doi.org/10.5194/hess-16-4143-2012).
35. **Dutra**, E., P. Viterbo, P.M.A. Miranda, and G. Balsamo, *Complexity of Snow Schemes in a Climate Model and Its Impact on Surface Energy and Hydrology*. Journal of Hydrometeorology, **2012**. 13(2): p. 521-538, doi:[10.1175/jhm-d-11-072.1](https://doi.org/10.1175/jhm-d-11-072.1).
36. Balsamo, G., R. Salgado, **E. Dutra**, S. Boussetta, T. Stockdale, and M. Potes, *On the contribution of lakes in predicting near-surface temperature in a global weather forecasting model*. Tellus Series a-Dynamic Meteorology and Oceanography, **2012**. 64, doi:[10.3402/tellusa.v64i0.15829](https://doi.org/10.3402/tellusa.v64i0.15829).
37. **Dutra**, E., C. Schär, P. Viterbo, and P.M.A. Miranda, *Land-atmosphere coupling associated with snow cover*. Geophysical Research Letters, **2011**. 38(15): p. L15707, doi:[10.1029/2011gl048435](https://doi.org/10.1029/2011gl048435).
38. **Dutra**, E., S. Kotlarski, P. Viterbo, G. Balsamo, P.M.A. Miranda, C. Schär, P. Bissolli, and T. Jonas, *Snow cover sensitivity to horizontal resolution, parameterizations, and atmospheric forcing in a land surface model*. Journal of Geophysical Research-Earth Surface, **2011**. 116(D21): p. D21109, doi:[10.1029/2011jd016061](https://doi.org/10.1029/2011jd016061).
39. Belo-Pereira, M., **E. Dutra**, and P. Viterbo, *Evaluation of global precipitation data sets over the Iberian Peninsula*. Journal of Geophysical Research-Earth Surface, **2011**. 116(D20): p. D20101, doi:[10.1029/2010jd015481](https://doi.org/10.1029/2010jd015481).
40. Balsamo, G., F. Pappenberger, **E. Dutra**, P. Viterbo, and B. van den Hurk, *A revised land hydrology in the ECMWF model: a step towards daily water flux prediction in a fully-closed water cycle*. Hydrological Processes, **2011**. 25(7): p. 1046-1054, doi:[10.1002/hyp.7808](https://doi.org/10.1002/hyp.7808).
41. Peled, E., **E. Dutra**, P. Viterbo, and A. Angert, *Technical Note: Comparing and ranking soil drought indices performance over Europe, through remote-sensing of vegetation*. Hydrol. Earth Syst. Sci., **2010**. 14(2): p. 271-277, doi:[10.5194/hess-14-271-2010](https://doi.org/10.5194/hess-14-271-2010).
42. Hazeleger, W., C. Severijns, T. Semmler, S. Ștefănescu, S. Yang, X. Wang, K. Wyser, **E. Dutra**, J.M. Baldasano, R. Bintanja, P. Bougeault, R. Caballero, A.M.L. Ekman, J.H. Christensen, B. van den Hurk, P. Jimenez, C. Jones, P. Kållberg, T. Koenigk, R. McGrath, P. Miranda, T. Van Noije, T. Palmer, J.A. Parodi, T. Schmith, F. Selten, T. Storelvmo, A. Sterl, H. Tapamo, M. Vancoppenolle, P. Viterbo, and U. Willén, *EC-Earth: A Seamless Earth-System Prediction Approach in Action*. Bulletin of the American Meteorological Society, **2010**. 91(10): p. 1357-1363, doi:[10.1175/2010BAMS2877.1](https://doi.org/10.1175/2010BAMS2877.1).
43. **Dutra**, E., V.M. Stepanenko, G. Balsamo, P. Viterbo, P.M.A. Miranda, D. Mironov, and C. Schar, *An offline study of the impact of lakes on the performance of the ECMWF surface scheme*. Boreal Environment Research, **2010**. 15(2): p. 100-112. [[PDF](#)]
44. **Dutra**, E., G. Balsamo, P. Viterbo, P.M.A. Miranda, A. Beljaars, C. Schar, and K. Elder, *An Improved Snow Scheme for the ECMWF Land Surface Model: Description and Offline Validation*. Journal of Hydrometeorology, **2010**. 11(4): p. 899-916, doi:[10.1175/2010JHM1249.1](https://doi.org/10.1175/2010JHM1249.1).
45. Balsamo, G., **E. Dutra**, V.M. Stepanenko, P. Viterbo, P.M.A. Miranda, and D. Mironov, *Deriving an effective lake depth from satellite lake surface temperature data: a feasibility study with MODIS data*. Boreal Environment Research, **2010**. 15(2): p. 178-190. [[PDF](#)].
46. Rutter, N., R. Essery, J. Pomeroy, N. Altimir, K. Andreadis, I. Baker, A. Barr, P. Bartlett, A. Boone, H.P. Deng, H. Douville, **E. Dutra**, K. Elder, C. Ellis, X. Feng, A. Gelfan, A. Goodbody, Y. Gusev, D. Gustafsson, R.

- Hellstrom, Y. Hirabayashi, T. Hirota, T. Jonas, V. Koren, A. Kuragina, D. Lettenmaier, W.P. Li, C. Luce, E. Martin, O. Nasonova, J. Pumpanen, R.D. Pyles, P. Samuelsson, M. Sandells, G. Schadler, A. Shmakin, T.G. Smirnova, M. Stahli, R. Stockli, U. Strasser, H. Su, K. Suzuki, K. Takata, K. Tanaka, E. Thompson, T. Vesala, P. Viterbo, A. Wiltshire, K. Xia, Y.K. Xue, and T. Yamazaki, *Evaluation of forest snow processes models (SnowMIP2)*. Journal of Geophysical Research-Atmospheres, **2009**. 114: p. D06111, doi:[10.1029/2008jd011063](https://doi.org/10.1029/2008jd011063).
47. **Dutra, E.**, P. Viterbo, and P.M.A. Miranda, *ERA-40 reanalysis hydrological applications in the characterization of regional drought*. Geophysical Research Letters, **2008**. 35(19), doi:[10.1029/2008gl035381](https://doi.org/10.1029/2008gl035381).

Book Chapters

Pappenberger, F., F. Wetterhall, E. Dutra, F. Di Giuseppe, K. Bogner, L. Alfieri and H. L. Cloke (2013). Seamless forecasting of extreme events on a global scale. *Climate and Land Surface Changes in Hydrology*. E. Boegh, E. Blyth, D. M. Hannah et al. Wallingford, Int Assoc Hydrological Sciences. 359: 3-10.

Other publications (non peer reviewed)

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