**Workshops**

**2018**

**ESA CCI User workshop, Vienna, Austria, 29 November 2018**

**WMO Global Cryosphere Watch 6th reduced Steering Group meeting, Davos, Switzerland, 26-28 November 2018**

**Luxembourg Institute of Science and Technology Water lecture series, “ECMWF surface data assimilation in the ECMWF systems” 13 November 2018**

**Harmosnow COST action ES1404 MC meeting and workshop: Towards a better harmonization of snow observations, modeling and data assimilation in Europe, Budapest, 29 and 30-31 October 2018**

  de Rosnay et al: GCW Snow Watch activities for improved snow data reporting and exchange on the Global Telecommunication System (GTS)

  Fierz et al: Harmosnow and GCW common goals and aspects

**40th EWGLAM - 25th SRNWP Workshop, 1-4 October 2018, Salzburg, Austria**

  Balsamo and de Rosnay: land surface modelling and assimilation at ECMWF, (presented by C. Kuehnlein)

**2nd International surface working group, 26-28 June, Lisbon, Portugal**


**ECMWF Workshop on observations and analysis of sea-surface temperature and sea ice for NWP and Climate Applications, 22-25 January 2018**


  Zuo H., M. Balmaseda, S. Tietsche, P. Browne, B. B. Sarojini, E. de Boisseson, P. de Rosnay: “Climate reanalysis and reforecast needs: An ocean perspective”

**2017**

**ECMWF/ESA workshop on using low frequency passive microwave measurements in research and operational applications, 4-6 December 2017**

  Escorihuela et al: “High resolution soil moisture from passive/active microwave and optical data synergy for agricultural applications”

  Rodriguez et al: “Neural networks retrievals and applications: what we learnt from SMOS”

**SMOS ECMWF-ESA-CESBIO meeting at ECMWF on SMOS NN DA 30 October 2017**

**5th SALGEE Workshop 2017 Yerevan, Armenia, 18-20 September 2017 (remote talk)**

**1st International Surface Working Group 19-20 July 2017, Monterey, USA**

**SMAP Weather focused applications meeting, 18 July 2017, Monterey**

**ISSI-BJ team meeting, Beijing, 27 Feb - 3 March 2017**

**COST Action HarmoSnow DWD, Offenbach, Germany, 8-9 March 2017**

**2016**

**COST Action HarmoSnow, Granada, 2-4 November 2016**

**COST Action HarmoSnow, Warsaw, Poland, 6 October 2016**

**SMOS progress meeting, ECMWF, Reading, 13 September 2016**

**H-SAF Project Team meeting, Roma, 21-22 June 2016**

**Snow Watch meeting, Ohio State University, 13-14 June 2016**

  de Rosnay et al: Snow data assimilation at ECMWF

  de Rosnay et al: The Harmosnow COST action

  de Rosnay et al: Snow Observing system
Copernicus C3S Regional Reanalysis Workshop, Reading, 19-20 May 2016

de Rosnay et al: High resolution land reanalysis

HarmoSnow COST action meeting, Leuven, 28 April 2016

Remote Sensing Workshop, Grenoble, 14-16 March 2016

de Rosnay et al: talk on "Assimilation of land surface satellite data for operational Numerical Weather Prediction at ECMWF"

2015

COST Action meeting, FMI, Helsinki, 2-4 November 2015

de Rosnay et al: Keynote talk on ECMWF snow modelling and data assimilation


de Rosnay et al: Comparison between SMOS observations and ECMWF reanalysed brightness temperatures: Long term monitoring and multi-year global analysis

Munoz Sabater et al: Towards an optimised use of SMOS data in the ECMWF Land Data Assimilation System

H-SAF Project Team meeting, Brussels 25-26 February 2015

2014

Core Climax Workshop on snow observations, ECMWF 17-19 November 2-14

de Rosnay et al., Assimilation of snow observations at ECMWF

SMOS Workshop (Understanding the Carbon and Water Cycles using SMOS Data and Models), Toulouse 13-14 November 2014

Balsamo et al. Better matching surface EO with NWP models

Muñoz-Sabater: Use of SMOS in a coupled land-atmosphere model: sensitivity to different model and observations scenarios.

H-SAF/HEPEX workshops, ECMWF, Reading, UK, 3-7 November 2014

de Rosnay P., E Dutra, A. Fouilloux, G. Balsamo, I. Mallas, E. Fucile, P. Lopez, C. Albergel, A. Beljaars, L. Isaksen: ECMWF snow modelling and data assimilation

Albergel C. P. de Rosnay, L. Isaksen, J. Muñoz-Sabater: Global monitoring of root zone soil moisture from scatterotmeter data assimilation : methodology and validation


Albergel, Hasenauer et al: Remote sensing estimation of soil moisture

Hasenauer, Albergel et al: H-SAF soil moisture products

SCA SAG, Brest, IFREMER, 5-6 June 2014

de Rosnay et al: ECMWF ASCAT soil moisture activities

H-SAF Project Team Meeting, Bratislava, 27-28 May 2014

Albergel et al: ECMWF ASCAT Soil Moisture activities

H-SAF First Assimilation workshop, Bratislava, 28 May 2014

Albergel et al: H27 methodology, a step by step characteristic of ASCAT assimilation using the SEKF at ECMWF

SMOS Quality Working Group-13, ESA/ESRIN, Frascati, 10-12 February 2014

Muñoz Sabater J. et al.: "ECMWF update on SMOS DA "

2013

ASCAT SAG, EUMETSAT, Darmstadt, 6-7 November 2013

de Rosnay et al.: "ECMWF ASCAT soil moisture activities"

H-SAF Project Team Meeting, Zamg, Vienna, 29-30 October 2013
Albergel et al.: “ECMWF H-SAF activities”

**SMOS-ECMWF Progress meeting-4, ECMWF, 14 March 2013**

de Rosnay P et al.: “Project status, microwave emission modelling and bias correction”

Muñoz Sabater J. et al.: “SMOS monitoring and data assimilation”

**SMOS Land Application workshop, ESA/ESRIN, Frascati, 25-27 February 2013**

de Rosnay P et al.: “Global Microwave Emission Models: Intercomparison and bias correction for SMOS-ECMWF data assimilation and Numerical Weather Prediction”

Muñoz Sabater J. et al.: “Incorporation of SMOS data within the ECMWF Extended Kalman Filter”

**H-SAF 2nd CDOP2 Project Team meeting, Berlin, 26-27 February 2013**

Albergel C. et al.: “SM-DAS-2 (H14) report”

**SMOS Quality Working Group-10, ESA/ESRIN, Frascati, 4-5 February 2013**

Muñoz Sabater J. et al.: “ECMWF update on assimilation of SMOS data”

Global Cryosphere Watch (GCW) Snow-Watch Workshop Toronto, Canada, 28-30 January 2013

de Rosnay et al.: “ECMWF snow data assimilation: use of snow cover products and in situ snow depth data for NWP”

2012

**H-SAF Product and Hydrological validation workshop, Krakow, Poland, 27-30 November 2012**

de Rosnay P., presented by Albergel C.: “SM-DAS-2 (H14) Production chain”

Albergel C.: * Soil Moisture Products Common validation methodology“

Albergel C.: "ECMWF and MetoFrance Product validation.”

**SMAP cal-val meeting, Oxnard (CA), 14-16 November 2012**

de Rosnay P., Muñoz Sabater J., Albergel C. and Isaksen L. poster: “Soil Moisture monitoring and analysis at ECMWF”

Reichle R., Crow W., de Rosnay P., Draper C. oral: "Model Products and Data Assimilation in Validation"

**SRNWP expert Team meeting, Finnish Meteorological Insitute, Helsinki, September 21 2012**

Balsamo and de Rosnay oral: "Land surface modelling and data assimilation at ECMWF"

**Third Workshop on Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling, Finnish Meteorological Insitute, Helsinki, September 18-20 2012**


**Soil Moisture CCI third progress meeting, TU Wien, Vienna, 19 September 2012**


**Catchment Hydrological Modeling and Data Assimilation (CAHMDA) 5th international workshop, ITC, University of Twente, Enschede, the Netherlands 9-13 July 2012**

Albergel C., P. de Rosnay, G. Balsamo, J. Muñoz Sabater, L. Isaksen and S. Boussetta, poster: "Soil Moisture analyses at ECMWF: Evaluation using global, ground based, in situ observations"

de Rosnay P., C. Albergel, G. Balsamo, L. Isaksen and J. Muñoz Sabater poster: "ECMWF Land Data Assimilation System"

**ISSI International Team meeting, Bern, 27-29 June 2012**

Muñoz Sabater J., P. de Rosnay, C. Albergel, G. Balsamo, S. Boussetta, A. Fouilloux, L. Isaksen, M. Dahoui: "Soil moisture analysis at ECMWF"

**SMOS PM3, ECMWF, 27 March 2012**

Muñoz Sabater et al. "SMOS monitoring and SMOS data implementation in the EKF"

de Rosnay et al. " CMEM v4, BUFR2GRIB software, CMEM calibration and bias correction"
ISSI Workshop on the Earth hydrological cycle, Bern, 6-10 February 2012

de Rosnay P., "Initialization of land surface variables for Numerical Weather Prediction"

2011

H-SAF validation workshop, Rome, 29 November - 2 December 2011

Albergel et al. "Soil moisture product validation methodology and comparison between SMOS, ASCAT and SM-DAS-2 products"

H-SAF Project Team meeting (PT3), Nevsehir, Turkey, 16-17 Nov. 2011

de Rosnay P., C. Albergel (presented by B. Zeiner) "ASCAT SM-DAS-2 Product: Root Zone Soil Moisture Profile Index"

ASCAT 35th Science Advisory Group meeting, Darmstadt, Germany, 9-10 November 2011

de Rosnay P. C. Albergel, L. Isaksen, "ECMWF status on ASCAT Soil Moisture data use"

ESA-ECMWF SMOS Phase-2, 2nd progress meeting (PM2), ECMWF, 7 November 2011:

Balsamo G. et al. "Land Surface model changes with relevance for the SMOS forward operator"

de Rosnay P. et al. "ECMWF LDAS, ASCAT Bias correction and DA, WP status, SMOS reprocessed data and bias correction preparation"

Muñoz Sabater J. et al. "SMOS monitoring, data thinning and noise filtering"

Albergel C. et al. "Soil moisture validation activities"

Workshop on Sentinel Convoy for Land Applications, ESA ESTEC, Noordwijk, 31 October/01 November 2011:


3rd Workshop on Remote Sensing and Modeling of Surface properties, Beijing, China, 18-20 October 2011:

P. de Rosnay, C. Albergel, G. Balsamo, L. Isaksen, J. Muñoz Sabater, J.-C. Calvet, C. Gruhier, Y. Kerr, T. Pellarin; Oral: "Use of active and passive microwaves satellite data for NWP soil moisture analysis"

J. Muñoz Sabater, P. de Rosnay, M. Drusch, A. Fouilloux, M. Dahoui, S. Mecklenburg; Oral: "Preparation activities for the assimilation of SMOS data in the ECMWF land surface analysis system"

SMAP Applications workshop, Washington DC, 12-13 October 2011


EWGLAM/SRNWP meeting, Tallinn, 10-13 October 2011

Balsamo G. and de Rosnay P.; Oral (presented by J.-F. Mahfouf); "Land Surface Modelling and Data Assimilation Recent Activities at ECMWF"

SMOS Science Workshop, Arles, France, 27-29 September 2011

Muñoz Sabater J., P. de Rosnay, M. Drusch, A. Fouilloux and M. Dahoui; Oral: "Toward the assimilation of SMOS brightness temperatures at ECMWF"


Gruhier C., T. Pellarin, P. de Rosnay and Y. Kerr; Poster: "SMOS Soil Moisture Product Evaluation over West-Africa at local and Regional scale"

Mialon A. and co-authors including P. de Rosnay; Poster: "SMOSREX: an experimental test site for the SMOS mission"

Wigneron, J.-P. and co-authors including P. de Rosnay; Poster: "First Evaluation of the SMOS Observations over the VAS Site"

SRNWP Expert Team on Land Surface meeting, 5 September 2011

RMS meeting on Measuring Surface meteorological variables using satellites, Physics Department, Oxford University, 23 March 2011

de Rosnay P. "Soil Moisture Remote Sensing"

ESA-ECMWF SMOS Phase-2, 1st progress meeting (PM1), ECMWF, 1 February 2011
de Rosnay P., et al. "SMOS data Assimilation study phase-2 and land surface analysis recent updates"


**JULES Meeting, CEH Wallingford, 12 January 2011**

de Rosnay P., et al., "Exploitation of satellite data in the land surface analysis at ECMWF"

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**2010**

**SMOS SVRT Meeting, Frascati, 29-30 November 2010**

de Rosnay P., Muñoz Sabater J., Balsamo G., Gruhier C., Kerr Y., Grippa M., Mougin E., Drusch M., "SMOS monitoring in West Africa"

Muñoz Sabater J., de Rosnay P., Dahoui M., Fouilloux A., Drusch M., "SMOS data monitoring at ECMWF"

**SMAP Science Definition Team Workshop, Pasadena, California 2-4 November 2010**

de Rosnay P., Muñoz Sabater J., Balsamo G., Boussetta S., Beljaars A., Drusch M., Scipal K., Isaksen L., Albergel C. "Use of satellite data for land surface analysis at ECMWF"

**ASCAT Science Advisory Group meeting, Darmstadt, Germany, 27-28 October 2010**

de Rosnay P., "ASCAT soil moisture work at ECMWF"

**EUMETSAT CDOP-2 preparation meeting, Darmstadt, Germany, 18-19 October 2010**

**SMOS End of Commissioning Meeting, 17 May 2010:**

Muñoz Sabater J., de Rosnay P., Fouilloux, A., Drusch M. and Dahoui M., Preliminary results from data ingestion at ECMWF

**H-SAF 2nd Workshop, Zakopane, Poland, 16-18 March 2010:**

de Rosnay et al.: Root zone volumetric soil moisture product from ASCAT surface soil moisture data assimilation in the Integrated Forecasting System

Hasenauer et al.: Scatterometer-derived global and regional surface soil moisture for Europe

**ESA-ECMWF SMOS 4th progress meeting (PM4), ECMWF, 4 March 2010:**

de Rosnay P., J. Muñoz Sabater, L. Isaksen Soil moisture analysis at ECMWF and Status of the SMOS DA study

Muñoz Sabater J., P. de Rosnay, A. Fouilloux, I. Mallas, M. Dragosavac, A. Hofstadler, L. Isaksen, Technical implementation of SMOS passive monitoring in the IFS

Muñoz Sabater J., P. de Rosnay, A. Fouilloux, I. Mallas, M. Dragosavac, A. Hofstadler, L. Isaksen, First results available with SMOS data

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**2009**

**ECMWF/GLASS Workshop on Land Surface Modelling, Data Assimilation and the implications for predictability, Reading, UK, 9-12 November 2009:**

de Rosnay P., Drusch M., Muñoz Sabater J., Balsamo G., Beljaars A., Scipal K., oral presentation: "Advances in land data assimilation at ECMWF"

Boone A., de Rosnay P., et al., oral presentation: "The AMMA Land Surface Model Intercomparison Project (ALMIP)."

Muñoz Sabater J., de Rosnay P., Balsamo G. and Fouilloux A., poster presentation: "ECMWF contribution to the SMOS mission"

**ASCAT Science Advisory Group to be held at EUMETSAT, Darmstadt, Germany, 7-8 October 2009:**

de Rosnay et al. (presented by H. Hersbach) Developments and evaluation at ECMWF

**SRNWP/EWGLAM meeting, 28 September - 1 October 2009, Athens:**
Balsamo G. and P. de Rosnay (presented by N. Weidi) Recent advances on land surface modelling & data assimilation at ECMWF in preparation for SMOS mission

ESF exploratory workshop on Improved Quantitative Fire description with multi-species inversions of observed plumes, Farnham Castle, 15 September 2009:
- de Rosnay et al., "ECMWF land surface analysis"

SMAP Application Working Group Workshop, Silver Spring, MD, USA, 9-10 September 2009:
- de Rosnay et al., ECMWF soil moisture analysis: use of active and passive microwave data

ESF exploratory workshop on Improved Quantitative Fire description with multi-species inversions of observed plumes, Farnham Castle, 15 September 2009:
- de Rosnay et al., "ECMWF land surface analysis"

2nd workshop on remote sensing and modeling of surface properties, Météo-France, Toulouse, 9-11 June 2009:
- de Rosnay P., Drusch M., Scipal K., Vasiljevic D., Balsamo G., Muñoz Sabater J. "ECMWF land surface analysis: current status and developments"
- Muñoz Sabater J., de Rosnay, P., Drusch M., Balsamo G. "ECMWF contribution to the SMOS mission"

1st Meeting of the Expert Team on Surface Processes, Météo-France, Toulouse, 12 June 2009:
- de Rosnay P., Balsamo G., et al., ECMWF land surface modelling and land surface analysis

ESA-ECMWF SMOS 3rd progress meeting (PM3), ECMWF, 28 May 2009:
- de Rosnay P., Introduction and SMOS forward operators implementation: Oceans and Land
- de Rosnay P., EKF and surface analysis status in IFS 35R3
- Muñoz Sabater J., Implementation of SMOS data in the IFS and AMSR-E C-band data background departure study

8th meeting of the H-SAF Project Team (PT8), Dipartimento della Protezione Civile, Rome, 24-25 May 2009
- de Rosnay, Scipal, Vasiljevic, Drusch: Last developments for operational implementation of ASCAT soil moisture data assimilation in the ECMWF Integrated Forecasting System (IFS)

1st H-SAF internal training workshop on soil moisture and hydrology, 14-15 May 2009, Vienna, Austria
- de Rosnay P., and Isaksen L. Introduction to data assimilation in Numerical Weather Prediction
- de Rosnay P., Land surface analysis in Numerical Weather Prediction de Rosnay P., Land surface analysis in Numerical Weather Prediction

International Soil Moisture Working Group (ISMWG), 10-11 March 2009, Instituto de Meteorologia, Lisbon, Portugal
- de Rosnay P., Grippa M., Pellarin T., et al. The AMMA-CATCH Soil Moisture measurement Network in West Africa

SMOS Validation and Retrieval Team (SVRT) Workshop, 11-13 March 2009, Lisbon, Portugal
- de Rosnay P., Drusch M., Muñoz Sabater J., Balsamo G., The Global Monitoring and data assimilation study
- de Rosnay P., Drusch M., Holmes T., Balsamo G., Muñoz Sabater J. CMEM (poster)
- de Rosnay P. CMEM demonstration tool
- Muñoz Sabater J., de Rosnay P., Drusch M., Balsamo G., Soil moisture analysis at ECMWF using a SEKF scheme : recent developments and preliminary results.
- Gruhier C., de Rosnay P. et al., Evaluation of microwaves soil moisture products based on two years of ground measurements a Sahelian region (poster).
- Grippa M., de Rosnay P., Pellarin T., The AMMA-CATCH Soil Moisture measurements network

2008

ESA-ECMWF SMOS progress meeting 12 December 2008, ECMWF
- de Rosnay P. et al. CMEM status
- de Rosnay P. et al. SMOS data assimilation study: Project Schedule, CCN and hand over
- de Rosnay P. et al. EKF implementation and results : use of satellite data for SM analysis
- Muñoz Sabater et al. Soil roughness effect and working plan

International workshop on Microwave Remote Sensing for Land Hydrology, 20-22 October 2008, Oxnard, California:
**Drusch M., de Rosnay, P. Balsamo, G. and Holmes, T., Towards the use of SMOS brightness temperatures in NWP systems: Preparatory work at ECMWF**


**ESA-ECMWF SMOS progress meeting 1st April 2008, ECMWF**

- de Rosnay P. at al. CMEM technical overview (code, structure, web site)
- de Rosnay P. et al. ALMIP-MEM Intercomparison and validation of multi-model approach with AMSR-E brightness temperatures
- de Rosnay P. et al. L-band ECMWF background errors on the SMOSREX site

**CAHMDA-III Data Assimilation Workshop**

- Drusch M., E. Andersson, G. Balsamo, P. de Rosnay, and K. Scipal, CAHMDA-III Data Assimilation Workshop, Melbourne, Australia, 2008 “Soil moisture analyses for NWP applications: Data assimilation experiments with ECMWF’s Integrated Forecast System”

**2007**

**SMOS-ECMWF kickoff meeting**


**SMOS workshop, Frascati, Italy, 29-31 Oct 2007:**

- de Rosnay, P., Drusch, M., Wigneron, J.-P., Holmes, T., Balsamo, G., Kerr, Y., Calvet, J.-C. “Two-year simulations of L-band brightness temperatures over the SMOSREX field site. Comparison between CMEM and LMEB” (poster)
- Drusch, M., P. De Rosnay, E. Andersson, and G. Balsamo, 2007: SMOS near real time data assimilation at ECMWF
- Gruhier, C., de Rosnay, P., Richaume, P., Kerr, Y., Rüdiger, C., Boulet, G., Walker, J., Mougín, E., Ceschia, E., Calvet, J.-C. “Large scale evaluation of AMSR soil moisture products based on ground soil moisture network measurements” (poster)