

Part A. PERSONAL INFORMATION

CV date	11/12/2020
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First/Family name	Ana Andreu Méndez		
ID number	74246249H	Age	36
Researcher codes	Open Researcher and Contributor ID (ORCID)	0000-0001-8346-5417	
	WoS Researcher ID	AAS-6098-2020	

A.1. Current position

Institution	Instituto de Investigación y Formación Agraria y Pesquera de Andalucía.		
Department	Centro IFAPA Alameda del Obispo		
Address	Avd. Menéndez Pidal s/n 14080 Córdoba, Spain		
Phone number	671 532 722	E-mail	anandream@posteo.net
Current position	Postdoc – Marie Curie Fellow	From	01/02/2018
Key words	Earth Observation, Evapotranspiration, Energy balance, Water Balance, Biomass, Drought, Dehesa		

A.2. Education

	PhD, Licensed, Graduate	University	Year
MSc Water and Sanitation Projects in International Cooperation		EOI Bussines school	2009
MSc Environmental Hydraulics -Watershed Management		University of Córdoba	2010
PhD in Biogeochemical Fluxes Dynamics and its Applications (Cum laude)		University of Córdoba	2014

A.3. General indicators of quality of scientific production

Web of Science Articles: 15, Total publications in Q1: 6, Times cited: 46, h-index:4, Average citations per year: 6.6, International stays: 4, Number of supervised PhD theses: 1 with expected reading date in 2020.

Part B. CV SUMMARY (*max. 3500 characters, including spaces*)

Currently I am a **Marie Skłodowska-Curie** postdoc, leading [SWATCH](#) project. Its main goal is to monitor water use and biomass production in savanna (dehesa in Spain and other semiarid savannas in California and South Africa-SA) to support decision-making processes, integrating multiple sources of field & Earth Observation (EO) data. The first phase was conducted at the Biometlab (Univ. of California, Berkeley -UCB) with **Prof. Baldocchi**, and in the current return phase I work at **Dr. Gonzalez-Dugo's** group (IFAPA, Cordoba, Spain). I also closely collaborate with USDA researcher Dr. Kustas in [Grapex](#), and with M. Johnston from Moorcroft Lab (Harvard Univ.), evaluating savanna thermal variation. Joining the Biometlab at one of the best universities worldwide, and under Prof. Baldocchi (h-index 129) supervision, has improved and strengthened my theoretical, technical and applied knowledge (1 paper under review and 2 in prep.). Besides providing me with the tools to build a holistic scientific perspective and develop innovative ideas, it has reinforced my collaborators' network and allowed me to enjoy a multidisciplinary environment.

From 2015-2018 I joined the **United Nations Univ. UNU-FLORES** (Dresden, Germany), where I contributed to the Nexus approach, and led together with Dr. Dube (University of Western Cape, SA) the **TIGER (ESA) project** "Remote Sensing of water use and water stress in African savanna ecosystem from local to regional scale: Implications for land productivity". While in FLORES I focused on policy, training and knowledge transfer, reinforcing the science-society relationship (C.4/5). Prior to this experience I was also a postdoc at Biometlab, where I defined my primary scientific interest: the functioning of partially covered systems in which water availability has an essential control, and my research line: the management of savanna-type systems as dehesas, of great natural value, using precision tools. I defended my **PhD in 2014**, under Dr. Gonzalez-Dugo and **Prof. Polo-Gomez** supervision, focused on the estimation of water flux in complex Mediterranean ecosystems.

My academic and personal trajectory demonstrates my potential and flexibility to adapt to new environments and disciplines, working with international groups from different



countries and cultures in Europe, America and Africa(6). During these years I have obtained competitive scholarships/projects(12), disseminate results in conferences and seminars(> 30), participate in multidisciplinary projects(8), review articles in Q1 journals, and prepare workshops and conferences in the academic(6) and the public(14) sphere. I have demonstrated **independent thinking and leadership skills**, by publishing in indexed journals(15), designing experiments and field campaigns (in Spain, USA and SA), conducting outreach activities, supervising students and colleagues and initiating independent collaborations. I have extensive international experience including stays at: Univ. of KuwaZulu Natal (SA), ITC Faculty of Geo-Information Science and EO - Twente Univ. (Netherlands), Hydrology and Remote Sensing Laboratory (HRSL-ARS-USDA) (US) and the Institute of Bio- and Geosciences Jülich (Germany). I also consider outreach activities essential to educate ourselves on how to integrate the planet's physical limits in our lives, and I participate in NGOs and initiatives to support women in Science and STEM. My research achievement record is significant for a 5-yr postdoctoral period.

Part C. RELEVANT MERITS

C.1. Publications (including books)

1. González-Dugo, M. P., Chen, X., **Andreu, A.**, Carpintero, E., Gómez-Giraldez, P. J. (2020). *Long-term water stress and drought monitoring of Mediterranean oak savanna vegetation using thermal remote sensing*. Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-190>
2. Carpintero, E., **Andreu, A.**, Gómez-Giraldez, P. J., Blázquez, Á., González-Dugo, M. P. (2020). *Remote-Sensing-Based Water Balance for Monitoring of Evapotranspiration and Water Stress of a Mediterranean Oak – Grass Savanna*. *Water*, 12, 1418; <https://doi.org/10.3390/w12051418>
3. Carpintero, E., Mateos, L., **Andreu, A.**, González-Dugo, M. P. (2020). *Effect of the differences in spectral response of Mediterranean tree canopies on the estimation of evapotranspiration using vegetation index-based crop coefficients*. *Agricultural Water Management*, 238(April), 106201. <https://doi.org/10.1016/j.agwat.2020.106201>
4. Román-Cascón, C., Lothon, M., Lohou, F., Ojha, N., Merlin, O., Aragonés, D., González-Dugo, M. P., **Andreu, A.**, Pellarin, T., Brut, A. Soriguer, R.C. Díaz-Delgado, R., Yagüe, C. (2020). *Can We Use Satellite-Based Soil-Moisture Products at High Resolution to Investigate Land-Use Differences and Land – Atmosphere Interactions? A Case Study in the Savanna*. *Remote Sens.* 2020, 12, 1701; <https://doi.org/10.3390/rs12111701>
5. **Andreu, A.**, T. Dube, H. Nieto, A. E. Mudau, M. P. González-Dugo, R. Guzinski, S. Hülsmann. 2019. *Remote sensing of water use and water stress in the African savanna ecosystem at local scale – Development and validation of a monitoring tool*, *Physics and Chemistry of the Earth*. <https://doi.org/10.1016/j.pce.2019.02.004>
6. **Andreu A.**, William P. Kustas, M. Jose Polo, A. Carrara and M. P. González-Dugo. (2018). *Modeling Surface Energy Fluxes over a Dehesa (Oak Savanna) Ecosystem Using a Thermal Based Two-Source Energy Balance Model (TSEB) I. Integration of Medium and Low Spatial Resolution Satellite Images*. *Remote Sensing*. 10, 567; <https://doi.org/10.3390/rs10040567>
7. **Andreu A.**, William P. Kustas, M. J. Polo, A. Carrara and M. P. González-Dugo. (2018). *Modeling Surface Energy Fluxes over a Dehesa(Oak Savanna) Ecosystem Using a Thermal Based Two Source Energy Balance Model (TSEB) II—Integration of Remote Sensing Medium and Low Spatial Resolution Satellite Images* *Remote Sensing*. 10, 558; <https://doi.org/10.3390/rs10040558>
8. **Andreu A.**, Timmermans WJ, Skokovic D, González-Dugo MP. (2015) Influence of component temperature derivation from dual angle thermal infrared observations on TSEB flux estimates over an irrigated vineyard. *Acta Geophysica*. ISSN (Online) 1895-7455, DOI: [10.1515/acgeo-2015-0037](https://doi.org/10.1515/acgeo-2015-0037)
9. Timmermans WJ, Kustas WP, **Andreu A.** (2015) Utility of an automated thermal-based approach for monitoring evapotranspiration. *Acta Geophysica*. ISSN (Online) 1895-7455, DOI: [10.1515/acgeo-2015-0016](https://doi.org/10.1515/acgeo-2015-0016)
10. Corbari C, Timmermans WJ, Andreu A. (2014) Intercomparison of surface energy fluxes estimates from the FEST-EWB and TSEB models over the heterogeneous REFLEX 2012



site (Barrax, Spain). Acta Geophysica. ISSN (Online) 1895-7455, DOI: [10.2478/s11600-014-0258-x](https://doi.org/10.2478/s11600-014-0258-x)

C.2. Research projects

1. PI- 2018-2021. Savanna water and carbon fluxes modelling integrating Earth Observation data — SWATC. 703978 — European Commission H2020-Marie Skłodowska-Curie actions-IF-2015 Institutions: IFAPA, UC Berkeley. Website: <https://savannahwatch.cc/>
2. PI- Remote sensing of water use and water stress in African savanna ecosystem from local to regional scale: Implications for land productivity – [Tiger Bridge project #410](#) - European Space Agency (Paris) 2016-02-01 to 2018.
3. PhD grant. Programa de formación para investigadores IFAPA 2010, funded by Fondo Social Europeo de Andalucía. "Use of satellite images to monitor soil surface moisture on a large scale. Application to the estimation of water losses due to evaporation".
4. PhD grant. Programa de formación para investigadores. Proyectos de excelencia 2010. "Dynamics of solids in suspension in estuaries", from the University of Cordoba.
5. Other fellowships:
6. 2012/2015 Mobility grants funded by Fondo Social Europeo de Andalucía: ITC-UT, Netherlands. 1268.85 €; USDA ARS, US. 3480.22 € + 3000\$ from USDA; Forschungszentrum, Germany. 2600 €.
7. 2013 Student grant for the Simposio Living Planet 2013, Edinburgh. 350 €.
8. 2012 5th REFLEX EUFAR FP7-EUROSPEC course funded by EUFAR.
9. 2010 Mobility grant funded by Ministerio de Educación, Cultura y Deporte de España for postgraduate studies. 3200 €.
10. 2010 ISF Grant to participate in the Cooperation Project Otuzco III 2000 €.

C.3. Supervised PhD, MsC and students.

PhD defense expected in 2021: Multiscale integration of water and energy balances using remote sensors to improve the continuous spatial-temporal estimation of evapotranspiration PhD candidate: Elisabet Carpintero García. FPU Scholar.

Supervised students: Jose Manuel Calzadilla de la Bella (IFAPA), Eva Kimonye (UNU-FLORES), mentor for WiSE Women in Science and Engineering Program (UCB).

C.4. Teaching activities and Scientific meetings organization

- 2018 Scientific Committee and Moderator of the 4th Remote Sensing and Hydrology Symposium (RSHS'18), Córdoba, Spain, from May 8th to 10th, 2018.
- 2017 20th to 22nd of September. Organizer/lecturer of the workshop on "[Remote Sensing of Water Use and Water Stress in the African Savanna Ecosystem from Local to Regional Scale](#)", University of Limpopo, Turfloop Campus, Polokwane, South Africa.
- 2017 3rd to 5th May, Participation and support organizing the International Dresden Nexus Conference 2017. DNC2017, SDGs & Nexus Approach: Monitoring & Implementation.
- 2017 Nexus Seminar No.19: [Remote Sensing for Water Management in African Savanna](#) (Kruger National Park). UNU-FLORES
- 2016/2017 [PAUWES-UNU webinars](#): 25th August 2017 "Remote Sensing for water management on semiarid ecosystems (modelling water scarcity situations)" and 30th March 2016 "Water management in drought-prone areas", in the frame of a summer school organized by ZEF and UNU-EHS for students of the Pan African University Institute for Water and Energy Science in the African Union.
- 2016 TIGER Workshop & TIGER KO-meeting 2016: Water for Agriculture. Hosted by UNECA in Addis Ababa, Ethiopia.
- 2016/2017 UNU-FLORES QGIS Basic Course & DPIM04 Course, Module Systems and Processes - Doctoral Degree Programme in Integrated Management of Water, Soil and Waste: "Ecosystems monitoring and modelling." Dresden, Germany.
- 2016 24th-28th October WMO & ENVISAT "[Training course in the use of satellite products for drought monitoring and agro-meteorological applications](#)", in Harare (Zimbabwe).
- 2014 Organisation of the international workshop "Remote sensing-based water and energy fluxes estimation in a changing environment" (CERESS and Panta Rhei Research initiative of IAHS, Working Group Water/Energy Fluxes in a Changing Environment), Córdoba, Spain.



- 2010/2014 Seminars at MSc course in Environmental Hydraulics. Official postgraduate programme from the UGR-UCO-UMA Environmental Flow Dynamics and its Applications.
- 2011/2014 Teaching assistant in the Module X “Integrated Watershed Management” from MSc course in Environmental Hydraulics.
- 2013 Lecturer at “Calculation of water quality parameters by remote sensing techniques” course, organized by the Environmental Flow Dynamics and Hydrology Group, UCO.
- 2013 Lecturer at “Trends in water, energy and CO₂ accounting: from high-resolution field measurement to remote-sensing techniques” course, by ceiA3.

C.5. Outreach activities

2018 [Girls on Ice Charity Climbs](#), US.

2017 Semana de la Ciencia 2017, Café con Ciencia, Córdoba, Spain.

2017 [How Do We Want to Live Tomorrow? Perspectives on Water Management in Urban Regions](#). Leopoldina, Brazilian Academy of Sciences in Essen (Germany).

2016-to present: Semillas Dispersas Radio show with the NGO Engineering without borders Andalucía, [Women in Science](#).

2014 Round table: “Participative processes”, Centro Social Rey Heredia, Córdoba.

2013 Film series: Critical cinema for restless nights, Córdoba. Make L'Off project (ISF).

2012 Workshop “Urban Gardens”, Córdoba (Spain). Make L'Off project (ISF).

2012 Conference: Water: today's and future challenges. University of Córdoba (Spain).

2012 Conference: Consumption alternatives, Córdoba (Spain). Make L'Off project (ISF).

2011 Alternative World Water Forum, Marseille (France) with Spanish public water operators.

2011 Workshop 3R (Bicycles, Responsible use of technologies, Home Preserved Food). Make L'Off (ISF).

2011 Photography show: Capture L'Off. UCO, La Casa Azul, Civic Centre. (Spain).

2011 Round table: Advocacy for Public Water, agreement between the municipal political parties for managing urban water under sustainable social, environmental and economic criteria. Spain.

2011 Participation in the programming, evaluation and analysis of Make L'Off project (ISF) (84508 €) and 2010 EpD project of ISF (153456 €).

2010 Conference: Rediscovering the sense of limits, Córdoba (Spain). EpD project (ISF).

2010 Conference: Gender fight as seed of social change. EpD project (ISF).

C.6. Specialized training

- Foundations of data science: Computational Thinking with Python, Inferential Thinking by Resampling, Prediction and Machine Learning. University of California, Berkeley. 2019. 96h
- Intro to Shell, Git, and Python. University of California, Berkeley. 2019. 8 hours.
- Emergency Training for the field. First Aid Basics. 2019.
- 8th Advanced Training Course On Land Remote Sensing. European Space Agency. 10 - 14 September 2018, University of Leicester, UK.
- Women and Science, 2^a Ed. Biodiversia S. Coop and Ecologistas Acción. 2018. 50 hours.
- Nature guide-interpreter. Ecologistas en Acción. Sylvania Educación Ambiental. 50 hours.
- Emergency Training. First Aid Basics. Dresden, Germany. 2016.
- Statistical Analysis Techniques Course. 2013. IFAPA. 24 hours.
- Communication in knowledge transfer. 2013. 20 hours.
- 5th EUFAR FP7-EUROSPEC Course “Regional Experiments For Land-Atmosphere Exchanges-REFLEX”.UT-ITC. 18 - 28 July 2012, Albacete, Spain.
- Trends in water, energy and CO₂ accounting: from high resolution field measurements to remote sensing techniques. 2012. ceiA3, Universidad de Córdoba.
- Sowing consciences, building food sovereignty. 2012. ISF. 50 hours.
- Hydrological Applications of Geographic Information Systems (GIS). 2011. UCO. 40 hours.
- Numerical Methods in Transport Processes in Aquatic Systems. 2010. UCO. 70 hours