



## CURRICULUM VITAE (CVA)

CV date	23/01/2022
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### Part A. PERSONAL INFORMATION

First name	Ana		
Family name	Andreu Méndez		
Gender	Female	Date of Birth	12/07/1984
ID number	74246249H		
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WoS Researcher ID	AAS-6098-2020		

#### A.1. Current position

Position	Postdoctoral Fellow		
Initial date	01/01/2022		
Institution	University of Córdoba (UCO)		
Department/Centre	Fluvial Dynamics and Hydrology Research Group, Dept. of Agronomy		
Country	Spain	Phone number	646070721
Keywords	Earth Observation, Savanna, Hydrology, Semiarid ecosystems, Evapotranspiration, Energy and Water Balance, Biomass, Drought.		

#### A.2. Previous positions (research activity interruptions)

Period	Position/Institution/Country/Cause of the interruption
01/02/2020 - 31/01/2021	Marie Curie postdoc. in “Instituto Andaluz de Investigación y Formación Agraria y Pesquera” (IFAPA), Cordoba, Spain.
01/02/2018 - 31/01/2020	Marie Curie postdoc. in the University of California, Berkeley (Cal), the USA (paid by IFAPA).
01/07/2017 - 31/10/2017	Undertaking in United Nations Univ. - Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden, Germany.
01/10/2015 - 30/06/2017	Research Assistant at UNU-FLORES, Dresden, Germany.
12/01/2015 - 30/09/2015	Postdoctoral fellow in Cal (paid by IFAPA), Berkeley, the USA.
01/12/2010 - 30/11/2014	P.h.D. student in IFAPA, Cordoba, Spain.
01/09/2010 - 30/09/2010	P.h.D. student in UCO, Cordoba, Spain

#### A.3. Education

PhD, Graduate Degree	University/Country	Year
Agronomic Engineer (nº9/142 students)	Polytechnic University of Valencia (Spain)	2008
MSc Water and Sanitation Projects in International Cooperation	EOI Bussines School (Spain)	2009
MSc Environmental Hydraulics	University of Cordoba (Spain)	2010
Ph.D. in Biogeochemical Fluxes Dynamics	University of Cordoba (Spain)	2014

### Part B. CV SUMMARY

I define myself as a semiarid ecosystems ecohydrologist. My work's overall scientific impact and achievement record are significant for my research stage and field (**H-index 7, 20 JCR pub.**, citations 94WoS/131GoogleScholar). My entire career has been connected to Mediterranean landscapes, involving semiarid savanna-type and agricultural ecosystems, driven by my concerns about the current agricultural and livestock production model, its sustainability, and potential



alternatives. Currently, I have a competitive position at the **Fluvial Dynamics and Hydrology** Group from **UCO**, focusing on the impact of microclimate conditions on the hydrology of Andalusian mountainous and dehesa areas. Previously I was a **Marie Skłodowska-Curie** postdoc at IFAPA (Córdoba, Spain), leading **SWATCH (Savanna WATER and Carbon fluxes modeling integrating Earth Observation)**. Its main goal was to monitor water use and biomass in savanna (dehesa in Spain and other semiarid savannas in California and South Africa-SA) to inform decision-making. The 1<sup>st</sup> phase was conducted with Prof. Baldocchi at one of the world's best and most competitive universities (**University of California, Berkeley** -Cal, US). I strengthened my theoretical, technical, and applied knowledge there while bolstering my international network. From 2015-2017 I worked at the United Nations University -FLORES (Germany), where I led the “**Remote Sensing of Water Use & Stress in African Savanna**[...]” project, funded by the European Space Agency. I mainly focused on policy, training, and knowledge transfer during this period, strengthening the science-society relationship. Before this experience, I was a **postdoc at Cal**, key in defining my research line. I defended my **Ph.D. in Dec. 2014** (Cum Laude) in collaboration with groups in Spain, The Netherlands, and the US.

All my career aligns with my fundamental scientific interest, the functioning of partially covered systems in which water availability has an essential control, reinforcing ecosystems services with technical recommendations based on precision tools. My contributions have been developed according to 3 axes: 1) To improve our understanding of the biophysical processes that govern water and carbon exchanges between semiarid, partially cover ecosystems and the atmosphere through experimental work (with publications in high impact journals such as *Agricultural & Forest Meteorology*), 2) To develop robust water and carbon modeling for semiarid ecosystems (with Q1 publications), 3) To strengthen the link between the rural and the academic sector (with **training**, and **knowledge transfer**) and society and science. I am committed to **public dissemination** and believe that science needs to be accessible to people, being essential to integrate the planet's physical limits into our lives. I have over a decade of experience in **outreach activities**: e.g., supporting **women in science** or ecosystem conservation through **NGOs**. My research has been covered in **international** and **national** media, **IFAPA**, and **UNU-FLORES** sites. I was interviewed in **ESA's Course** and our group for **Canal Sur Andalucía**.

I have demonstrated **leadership** and independent thinking by leading projects (2), publishing in indexed journals (9 in Q1, 3 in 1<sup>st</sup> decile, 11 as of 1<sup>st</sup>, 2<sup>nd</sup>, or last author), designing and conducting experiments and field campaigns (e.g., **Tonzi-Ameriflux** in the US, **Kruger Park** in SA, or **Santa Clotilde** in Spain), supervising Ph.D. thesis (1 finalized/1 ongoing), writing book chapters (e.g., **Fekete et al., 2021**; **Polo et al., 2013**), and initiating independent collaborations with world-leading researchers that developed into publications or project collaborations. I also have been Co-Chair, Guest Editor, and part of the Scientific Committee for the **Remote Sensing & Hydrology Symposium -IAHS**, coordinator, and part of the **Workshop on Remote Sensing for Monitoring Water Fluxes in African Savannas**, assistant and reviewer in the **DNC 2017**, and coordinator of the workshop **Remote sensing-based water and energy fluxes estimation** [...]. My academic and personal trajectory demonstrates my potential and flexibility in adapting to new environments and disciplines, working with international groups from different cultures. Besides the mentioned 5-yrs abroad, I have extensive **international** experience, including experimental campaigns, participation in projects (e.g., **Grapex-USDA**), training courses (e.g., **REFLEX2012**, **ESALTC18**), conferences (27 oral/53 international of 61), and short stays (> 8months) in South Africa (KwaZulu Natal Univ.), the Netherlands (ITC, Twente Univ.), Germany (Institute of Bio- and Geosciences Forschungszentrum) and US (Hydrology and Remote Sensing Lab. ARS-USDA). I have **teaching experience**, participating in doctorate programs (MSc in Environmental Hydraulics in UCO, and Integrated Management of Material Fluxes in UNU-FLORES), **courses**, and **seminaries**.

## Part C. RELEVANT MERITS

### C.1. Publications (selected 10/20) (Impact Factor -IF, Times cited in WoS/Google Scholar -CX/CX)

1. Burchard-Levine, V., Nieto, H., Riaño, [...], & Martín, M. P. **12/8** (2021) *A remote sensing-based 3-source energy balance model to improve global estimations of ET in semi-arid tree-grass ecosystems*. **Global Change Biology**, 00, 1– 23. 1<sup>st</sup>D (1/60 Biodiversity Conserv.), IF: 4.745 (JCR)

2. Johnston, M., **Andreu, A.**, Verfaillie, J., Baldocchi, D., González-Dugo, M. P., Moorcroft, P. R. (2021) *Measuring surface temperatures in a woodland savanna: Opportunities and challenges of thermal imaging in an open-canopy ecosystem*. *Agric. Forest Meteorol.* **310**, 108484. [1<sup>st</sup>D \(3/91 Agronomy\)](#), IF: 5.734 (JCR) **C1/C1**
3. Carpintero E., Anderson M.C., **Andreu A.**, Hain C., Gao F., Kustas W.P., González-Dugo M.P. (2021) *Estimating Evapotranspiration of Mediterranean Oak Savanna at Multiple Temporal and Spatial Resolutions. Implications for Water Resources Management*. *Remote Sensing*. **13(18):3701**. [Q1 \(27/200 Geosciences\)](#), IF: 4.848 (JCR)
4. González-Dugo, M. P., Chen, X., **Andreu, A.**, Carpintero, E., Gómez-Giraldez, P. J., Carrara, A., and Su, Z. (2021) *Long-term water stress and drought assessment of Mediterranean oak savanna vegetation using thermal remote sensing*, *Hydrol. Earth Syst. Sci.*, **25**, 755–768. [1<sup>st</sup>D \(7/98 Water Resources\)](#), IF: 5.748 (JCR) **C3/C5**
5. 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**, 106201. [Q1 \(16/98 Water Resources\)](#), IF: 4.516 (JCR) **C7/C12**
6. Carpintero, E., **Andreu, A.**, Gómez-Giráldez, P. J., Blázquez, Á., González-Dugo, M. P. (2020). *Remote-Sensing-Based Water Balance for Monitoring of ET and Water Stress of a Med. Oak-Grass Savanna*. *Water*, **12**, 1418. [Q1\(125/704 Geograp.\)](#) IF:3.7 (SJR) **C5/C6**
7. **Andreu, A. (CA)**, 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 & Chem. of the Earth*, **112** 154-164. [Q2 \(39/94 Water Resources\)](#), IF: 2.308 (SJR) **C5/C10**
8. **Andreu A (CA)**, Kustas, W.P., Polo, M.J., Carrara, A. and González-Dugo, M.P. (2018). *Modeling Surface Energy Fluxes over a Dehesa (Oak Savanna) Ecosystem Using TSEB I*. *Remote Sensing*. **10**, 567. [Q1 \(7/30 Remote Sensing\)](#), IF: 2.992 (JCR) **C17/C21**,
9. **Andreu A (CA)**, Kustas, W.P., Polo, M.J., Carrara, A. and González-Dugo, M.P. (2018). *Modeling Surface Energy [...] II—Integration of Remote Sensing Medium and Low Spatial Resolution Satellite Images* *Remote Sensing*. **10**, 558; [Q1](#), IF: 2.992 (JCR) **C11/C12**
10. **Andreu A (CA)**., Timmermans W.J., Skokovic D., González-Dugo M.P. (2015) *Influence of component temperature derivation from dual-angle thermal infrared observations on TSEB flux estimates over an irrigated vineyard*. *Acta Geophysica*. **63**, 1540–1570. [Q2 \(48/99 in Geophysics\)](#), IF: 2.3 (SJR). **C7/C11**

## C.2. Congresses (selected 4/61)

1. **Andreu, A.**, Carpintero, E., Gómez-Giráldez, P.J., González-Dugo, M.P. Accounting for carbon exchanges in a semiarid oak savanna (dehesa). (2021). [European Geosciences Union General Assembly 2021](#). Oral Online presentation.
2. Johnston, M., **Andreu, A.**, Verfaillie, J., Baldocchi, D. D., Moorcroft, P. R. What Lies Beneath: Vertical Heterogeneity in Vegetation Canopy Temperature. (2020) December. [AGU Fall Meeting 2020 B088-03](#). Oral online presentation.
3. **Andreu, A.**, Gómez-Giráldez, P., Carpintero, E., Blázquez, A., González-Dugo, M. P. (2020) Integración de medidas, sensores remotos y modelos para el estudio de la dehesa a escala local y regional. [VIII Remedía Workshop](#). Oral Online presentation.
4. **Andreu A**, Dube T, Nieto H, Mudau AE, Guzinski R, Hülsmann S, and González-Dugo MP. (2018). Monitoring South African savanna's water use and stress using Sentinel 2 and Sentinel 3 satellites. IAHS Panta Rhei Conference. Harare, Zimbabwe, 25-27th Oct 2018. Oral presentation

## C.3. Research projects (selected 4/10)

1. Team member. 01/01/2020-30/06/2022 1265875-R. SIERRA. Seguimiento hidrológico de la vegetación en montaña mediterránea mediante fusión de sensores remotos en Andalucía. PI: Dr. Pimentel (UCO). Institutions: UCO. Funded by UCO and Junta de Andalucía. 25424€



2. **PI.** 01/02/2018-31/01/2021. H2020-MSCA-IF-2015 [SWATCH GA. 703978](#) “Savanna water and carbon fluxes modelling integrating Earth Observation data”. Funded by: European Commission H2020-Marie Skłodowska-Curie actions. Institutions: IFAPA, Cal. 239191.2€
3. **PI.** 01/02/2016-01/02/2018. [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. Funded by: ESA. Institutions: UNU-FLORES, Univ. KwaZulu Natal. 31000€
4. Collaborator. 01/10/2012-30/06/2018. Ecosistemas de dehesa: Desarrollo de políticas y herramientas para la gestión y conservación de la biodiversidad (LIFE+11/BIO/ES/000726) BioDEHESA. PI: Dr. Gonzalez-Dugo (IFAPA). Institutions: IFAPA, Unión de Pequeños Agricultores y Ganaderos, other. Funded by: European Commission. 919920€

#### C.4. Technology/Knowledge transfer (selected 5)

1. **Andreu, A.**, Carpintero, E., Gómez-Giráldez, P., Carbonero, M.D., González-Dugo, M.P. (2021) [Modelado de Flujos de Agua y Cobertura Vegetal en Dehesa con Teledetección](#) – Córdoba. Consejería de Agricultura, Ganadería, Pesca y Desarrollo Sostenible. IFAPA, 16 p.
2. **Andreu, A.** (2021) [Supporting decision-making processes in semi-arid Savannas with Earth Observation](#). The Project Repository Journal, Volumen 8. ISSN 2632-4067. 104-107p. European Dissemination Media Agency (Eds).
3. Organizer, coordinator, and lecturer of the workshop on “[Remote Sensing of Water Use and Water Stress in the African Savanna Ecosystem from Local to Regional Scales](#),” 2017- 20<sup>th</sup> to 22<sup>nd</sup> of September. University of Limpopo, Turfloop Campus, Polokwane, South Africa.
4. **Andreu A.**, Kimonye E and Dube T. (2017) [TIGER SAVANNA TOOL HANDBOOK](#), *Remote Sensing of Water Use and Water Stress in African Savanna Ecosystem from Local to Regional Scale*. Dresden: UNU-FLORES. Eds: Atiqah F. ISBN 9783944863542.
5. **Andreu A.**, Berger, V., [22], Wolf. Authors in alphabetical order. (2017) [How Do We Want to Live Tomorrow? Perspectives on Water Management in Urban Regions](#). Leopoldina, Brazilian Academy of Sciences in Essen (Germany).

#### C.5. Other merits

1. **Short research stays** -postdoc 1) 1-month in 2015, University of KwaZulu Natal, Pietermaritzburg, SA. With Prof. **Dube**. -pre-doc 2) 1-month in 2013, ITC- Faculty of Geo-Information Science and Earth Observation-University of Twente, Netherlands. With Dr. **W.J. Timmermans**. 3) 3-months in 2012, USDA-ARS Hydrology & Remote Sensing Lab. The USA. With **Dr. Kustas**. 4) 3-months in 2011, Institut für Bio-und Geowissenschaften Jülich Germany. With **Dr. Graff**.
2. **Doctoral dissertation supervision:** -defense date 19/11/2021. **Dr. Carpintero.** [Use of remote sensing in the monitoring of dehesa vegetation and its influence on the hydrological balance at basin scale](#) (Suma Cum Laude by UCO). -planned end date 2024. Maria J. Muñoz. Drought impacts on dehesa primary production and other ecosystem services. **Students supervision:** Jose Manuel Calzadilla de la Bella (July/September 2020 at IFAPA), Eva Kimonye (July/September 2016 at UNU-FLORES), mentor for the [WiSE Womxn in Science Program](#) (2018, Cal).
3. **Guest-Editor** on Proceedings of the International Association of Hydrological Sciences. 380. (2018). Earth Observation for Integrated Water and Basin Management. M. P. González-Dugo, C. Neale, A. Andreu, R. Pimentel, and M. J. Polo.
4. **Pre-doctoral fellowships:** 4 Mobility grants funded by FEDER (ITC-UT, Netherlands: 1268.85 €; USDA ARS, USA: 3480.22 € + 3000\$ from USDA; Forschungszentrum, Germany: 2600 €), Student grant Symposia Living Planet 2013 in Edinburgh, 5th Reflex Eufar FP-7-Eurospec.
5. **Ph.D. grants obtained:** "Use of satellite images to monitor soil surface moisture on a large scale. Application to the estimation of water losses due to evaporation". Programa de formación para investigadores IFAPA 2010; P09-RNM-4735 “Dynamics of solids in suspension in estuaries”. Programa de formación para investigadores. Proyectos de excelencia 2010. Funded by: Plan Nacional de I+D+i. Institutions: UCO. Supervisor: Prof. Polo-Gómez.
6. “Ignite” talk: [Estudiando la salud de los ecosistemas desde el espacio](#). Ciencia contra-reloj: microcharla de divulgación científica Ciencia y Música bajo las Estrellas.