

Curriculum Vitae

Name	A. DE TOMAS CALERO
First Name	Alberto
Date of Birth	14 October 1983
Nationality	Spanish
Main Disciplines	Hydrology, Remote Sensing, Geographical Information Technologies, Simulation models and forecasting, Water resources planning and management, Agricultural water management, Climate Change.
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Key Qualifications

Dr. A. (Alberto) de Tomás is an environmental scientist (BSc) specialised in Geographical Information Technologies (MSc-PhD) applied to water resources management and climate change adaptation. He is experienced in the use of GIS and Remote Sensing techniques, in combination with Earth natural processes simulation models (energy and water fluxes), to solve complex spatial problems for the evaluation and decision support planning of water resources, both in the short and long-term. Dr. de Tomás has worked in several international research Institutes, located in Spain, Denmark and Israel, involved in Sustainable Management of Water Resources, Earth Observation Processes and Agriculture. Since 2016 he is a Consulting Researcher and Project Manager at FutureWater, Spain, working on European funded Projects (H2020) regarding irrigation water management and drought impacts in semiarid areas.

Educational background

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| 2015 – 2016 | MEd. in Project Management and Economic and Financial Profitability Analysis of R&D&I Projects, U.N.E.D. |
| 2010 – 2015 | PhD., <i>Cum Laude</i> and international special mentions, in Geographical Information Technologies. Thesis: <i>The role of evapotranspiration in water resources management: local measurements and regional estimates</i> . University of Alcalá. |
| 2008 – 2009 | MSc-Tech. in Geographical Information Technologies. University of Alcalá. |
| 2002 – 2008 | BSc. in Environmental Sciences. University of Alcalá. Last course completed at Kingston University London (UK). |

Professional Experience

- 2016-present Consulting Researcher, Expert in Water Resources Management. FutureWater, Cartagena, Spain.
- 2015-2016 IT engineer (analyst/tester, programmer/developer). NOKIA Corporation, Madrid, Spain.
- 2014 Predoctoral researcher at Department of Agriculture and Biotechnology of The Jacob Blaustein Institutes for Desert Research. Ben-Gurion University of The Negev, Beer-Sheva, Israel.
- 2013 Visiting predoctoral researcher at the Department of Water Resources. DHI, Hørsholm, Denmark.
- 2011 Visiting predoctoral researcher at the Department of Geography and Geology. University of Copenhagen, Copenhagen, Denmark.
- 2009-2014 Predoctoral researcher and Junior Consultant at the Department of Sustainable Management of Water Resources. IMDEA Water, Madrid, Spain.
- 2009 GIS analyst at the Department of Remote Sensing. INDRA Space, Madrid, Spain.
- 2007-2008 Environmental consultant at the Department of Sustainability and CSCAIPÉ. Kingston University London, UK.

Teaching Experience

- Experience in conducting Environmental Education and Hydrology seminars in secondary schools.
- Master Thesis in Geographical Information Technologies co-supervision:
Amores Ruiz, E. (2011). *Hydrological modelling of the Henares river basin with WEAP*.

Overseas Professional Experience

Resident:

Spain (8 years), UK (9 months), Denmark (8 months), Israel (5 months).

Selection of Assignments and Projects

- 2016 – 2020 Researcher in European research and innovation project (H2020 programme) BRIGRID (<http://brigaid.eu/>) on market transfer of technologies for water resources management. Using drones and satellite imagery for drought management.
- 2015 – 2019 Researcher and leader of agriculture-drought work package in European research and innovation project (H2020) IMPREX (<http://imprex.eu/>) on developing climate services and improving predictions of hydrological extremes.
- 2011– 2013 Researcher in National (Spanish Ministry of Economy and Competitiveness) research and innovation project INTEGRATOR (CTM2011-27657) - *An integrated assessment of anthropogenic pollutant levels and their ecological impact on river basins. A study of the Henares River Basin.*
- 2010-2014 Researcher in (IMDEA Water) research and innovation Project BACH - *Henares River Basin Balance.*
- 2009 GIS analyst in National (Ministry of Development) SIOSE Project – Land Use Geographic Information System.

Language Skills

- Spanish: mother tongue
English: professional competence, fluency in writing and speaking

Computer Skills

- GIS / Remote Sensing: ArcGIS, QGIS, Erdas Imagine, ENVI, Idrisi, Surfer.
Simulation models: SWAT, MIKE SHE, HEC-HMS, HEC-RAS, Visual Modflow, AquaCrop, SWAP, WEAP, SIMPA
Programming: R, VBA, VB.NET, IDL, AutoLISP, C#, Python, MATLAB, JavaScript, PHP
Databases: SQLite, MySQL
Design: AutoCAD, BricksCAD

Publications

Peer-reviewed publications

- de Tomás, A.**; Nieto, H.; Guzinski, R.; Sandholt, I.; Berliner, P. (2014). Validation and scale dependencies of the triangle method for the evaporative fraction estimation over heterogeneous areas. *Remote Sensing of Environment*, 152, 493-511.
- de Tomás, A.**; Ridler, M.; Madsen, H.; Nieto, H.; Berliner, P. (in preparation). Assessment of climate change impacts on water resources in the Henares river basin.
- de Tomás, A.**; Nieto, H.; Berliner, P. (in preparation). A model to estimate evapotranspiration from the relation between crop resistance and soil moisture.
- de Tomás, A.** (2014). The role of geographic information technologies in water resources management. Remtavares, Blog: El Agua. [<http://www.madrimasd.org/blogs/remtavares/2014/03/13/131985>].
- Sanz, J.M; de Miguel, A.; de Bustamante, I.; **de Tomás, A.**; Goy, J.L. (2014). Technical, financial and location criteria for the design of land application system treatment. *Environmental Earth Sciences*, 71, 13-21.
- de Miguel, A.; Sanz, J.M.; de Bustamante, I.; **de Tomás, A.**; Goy, J.L. (2013). Wastewater Treatment and Reuse as a Tool for the Social and Environmental Improvement of Populations within Protected Environments. In *Management of Water Resources in Protected Areas*. Springer.
- de Tomás, A.**; Nieto, H.; Guzinski, R.; Sandholt, I.; Berliner, P. (2012). Remote Sensing applications in Hydrology. Estimation of evapotranspiration with the triangle method. In *Cuadernos de Geomática Aplicada (1)*. IMDEA Water.
- de Tomás, A.**, Salas, F. J., Santos, C. Garzón, A. y Moreno, V. (2010). Soil sealing estimation through spectral analysis techniques. *Serie Geográfica*, 16: 81-92. Madrid, University of Alcalá, Department of Geography.

Conference proceedings or posters

- de Tomás, A.**; Berliner, P. (2013). Monitoring aerodynamic temperature on a crop field. Poster presentation: *Atmospheric Physics Symposium*, Tübingen, Germany.
- de Tomás, A.**; Nieto, H.; Berliner, P.; Salas, J. (2013). Studying evapotranspiration at different scales. Poster presentation: *ESA Advanced Training Course in Land Remote Sensing*, Athens, Greece.
- de Tomás, A.**; Nieto, H.; Guzinski, R.; Sandholt, I.; Berliner, P. (2012). Remotely sensed estimations of EF. Poster presentation: *PhD Course in Earth Observation for Climate Research*, University of Copenhagen. Copenhagen, Denmark.
- de Tomás, A.**; Nieto, H.; Guzinski, R.; Mendiguren, G.; Sandholt, I.; Berliner, P. (2012). Multi-scale approach of the surface temperature/vegetation index triangle method for estimating evapotranspiration over heterogeneous landscapes. Poster presentation: *EGU General Assembly*, Vienna, Austria.
- de Miguel, A.; Sanz, J.M.; de Bustamante, I.; **de Tomás, A.**; Goy, J.L. (2011). Land application Systems as friendly environment wastewater and reuse system. Oral presentation: SmallWat, Seville, Spain.
- de Miguel, A.; Sanz, J.M.; **de Tomás, A.**; de Bustamante, I.; Goy, J.L. (2010); Wastewater Treatment and Reuse as a Tool for the Social and Environmental Improvement of Populations within Protected Environments. Oral presentation: *I Symposium on Water Management in Protected Environments*, Pinar del Río, Cuba.