Curriculum Vitae Héctor Nieto Solana

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Educational level

Ph.D. on "Cartography, GIS, and Remote Sensing" by the University of Alcalá. December 2009

Ph.D. dissertation: "Application of Remote Sensing and Geographical Information Systems for Wildfire Danger Assessment". Academic advisors: Dr. Inmaculada Aguado and Dr. Emilio Chuvieco

Master Degree on "Cartography, GIS, and Remote Sensing". University of Alcalá. June 2007

M.Sc. dissertation: "Assessment of danger of natural-caused forest fires: development of long- and short-term probability of occurrence models in Madrid and Aragon (2007)" Academic advisor: Dr. Inmaculada Aguado

Engineering Degree on Forestry. Polytechnic University of Madrid. May 2004.

B.Sc. dissertation: "Assessment of forest fire danger by means of remote sensing: Fuel Moisture Content estimation and burned area mapping in Southeast France (2004)". Academic advisor: Dr. Joaquín Solana

Research Positions

March 2013 – March 2014: Post-doctoral researcher at the Department of Geosciences and Natural Resource Management of the University of Copenhagen (DENMARK):

Project: Knowledge based climate adaptation in West Africa: Capability building of a remote sensing system for producing information for meteorological, hydrological and agricultural applications.

November 2012 – February 2013: Remote Sensing Specialist at GRAS A/S (DENMARK):
Assessment of MODIS ocean chlorophyll and turbidity in Denmark and Australia

October 2009 – October 2012: Post-doctoral researcher at the Department of Geography and Geology of the University of Copenhagen (DENMARK)

Project: HOBE, center for hydrology. Remote sensing of energy and water fluxes in the Skjern River basin (Denmark)

June 2005 – June 2009: Pre-doctoral contract at the Department of Geography of the University of Alcalá (SPAIN).

Project: BioSpec. Linking spectral information at different spatial scales with biophysical parameters of Mediterranean vegetation in the context of global change

Project: FIREMAP. Integrated analysis of forest fire risk using Remote Sensing data and Geographic Information Systems.

July 2003 – March 2004: "Stagiaire" (Research trainee) at the Maison de la Télédétection en Languedoc-Rousillon, Montpellier (FRANCE)

Project: SPREAD. Forest Fire Spread Prevention and Mitigation: Estimation of Fuel Moisture Content with remote sensing data

Publications

Peer-reviewed international journals: 9 (Scopus' h-Index=5, 117 citations)
Submitted manuscripts: 3
Journals of public interest: 4

Relevant scientific techniques and skills acquired

Radiative transfer modeling: MODTRAN, 4SAIL and PROSPECT
Software Packages: Quantum GIS, ENVI, ArcGIS, ERDAS Imagine, PCI Geomatics, SPSS
Programming: Python, R, IDL, MATLAB, Visual Basic
Languages: Native Spanish, fluent English and French, basic Danish (Module 3/6)

Teaching and tuition functions

Co-supervisor of three Ph.D. students and one M.Sc. student

PhD level

Lecture Seminar in "FIVA International PhD course in Remote Sensing and Environmental Change", 2011. University of Copenhagen: Forest fires and relation with environmental factors

MSc level

Seminar in "Remote Sensing Seminars and Project Work", 2012. University of Copenhagen: Applications of passive remote sensing for vegetation

Lecturer in "Remote Sensing Seminars and Project Work", 2011. University of Copenhagen: Corrections in the Thermal Infrared Domain – Evapotranspiration – Radiative Transfer Models

Lecture Seminar in "Remote Sensing of the Biosphere", 2011. University of Copenhagen: Remote sensing of forest fires.

Lecture Seminar in "Remote Sensing of the Biosphere", 2010. University of Copenhagen: Advanced methods for supervised classification

Practical assistant in "Change Detection Techniques". 2008. Master on Geographical Information Technologies. University of Alcalá.

Lecturer in "Extraction of information from new sensors: LIDAR". 2007. Master on Geographical Information Technologies. University of Alcalá.

BSc level

Lecture assistant in "Thematic Cartography". 2009. Geodesy and Cartography Engineering University of Alcalá

Management experience

September 2007 to September 2008: Coordinator assistant of the Master on Geographical Information Technologies. University of Alcalá

October 2012: Coordinator of the Ph.D. course on Earth Observation for Climate Change Research. University of Copenhagen

Other information of interest

Keynote lecture: SPECNET-EUROSPEC meeting:" Multiangular thermal infrared data and radiative transfer modeling for sensible heat flux estimation". Madrid 27-29 June 2012

Visiting research scholarship: Institute of Geography and Geology. University of Copenhagen (Denmark). September to December 2008.

Scientific referee for: Remote Sensing of Environment, Journal of Applied Meteorology and Climatology, Remote Sensing, International Journal of Applied Earth Observation and Geoinformation, Hydrology and Earth System Sciences, ISPRS Journal of Photogrammetry and Remote Sensing, Applied and Environmental Soil Science, and Theoretical and Applied Climatology

List of Publications

Guzinski, R., Anderson, M. C., Kustas, W. P., Nieto, H., & Sandholt, I.: Using a thermal-based two source energy balance model with time-differencing to estimate surface energy fluxes with day–night MODIS observations (2013). *Hydrology and Earth System Sciences, 17*, 2809-2825.

Morillas, L., Garcia, M., Nieto, H., Villagarcía, L., Sandholt, I., González-Dugo, M.P., Zarco-Tejada, P.J., & Domingo, F. (2013) Using radiometric surface temperature for energy flux estimation in Mediterranean drylands from a two-source perspective. *Remote Sensing of Environment* 136, 234-246

Nieto, H., Aguado, I., García, M. & Chuvieco, E. (2012). Lightning-caused fires in Central Spain: Development of a probability model of occurrence for two Spanish regions. *Agricultural and Forest Meteorology 162-163*, 35-43

Nieto, H., Sandholt, I., Aguado, I., Chuvieco, E., & Stisen, S. (2011). Air temperature estimation with MSG-SEVIRI data: Calibration and validation of the TVX algorithm for the Iberian Peninsula. *Remote Sensing of Environment 115*, 107-116

Nieto, H., Aguado, I., Chuvieco, E., & Sandholt, I. (2010). Dead fuel moisture estimation with MSG-SEVIRI data. Retrieval of meteorological data for the calculation of the Equilibrium Moisture Content. *Agricultural and Forest Meteorology 150*, 861-870

Vilar, L., Nieto, H., & Martín, M.P. (2010). Integration of Lightning- and Human-Caused Wildfire Occurrence Models. *Human and Ecological Risk Assessment: An International Journal, 16: 2*, 340-364

Chuvieco, E., Aguado, I., Yebra, M., Nieto, H., Salas, J., Martín, M.P., Vilar, L., Martínez, J., Martín, S., Ibarra, P., de la Riva, J., Baeza, J., Rodríguez, F., Molina, J.R., Herrera, M.A., & Zamora, R. (2010). Development of a framework for fire risk assessment using remote sensing and geographic information system technologies. *Ecological Modelling, 221, 1*, 46-58

García, M., Chuvieco, E., Nieto, H., & Aguado, I. (2008). Combining AVHRR and meteorological data for estimating live fuel moisture content. *Remote Sensing of Environment, 112*, 3618-3627

Aguado, I., Chuvieco, E., Borén, R., & Nieto, H. (2007). Estimation of dead fuel moisture content from meteorological data in Mediterranean areas. Applications in fire danger assessment. *International Journal of Wildland Fire, 16*, 390-397

Submitted Manuscripts

Morillas, L., Villagarcía, L., García, M., Nieto, H., Uclés, O., & Domingo, F. (*Accepted)* Environmental factors affecting the accuracy of surface fluxes from a two-source model in Mediterranean drylands: upscaling instantaneous to daytime estimates. *Agricultural and Forest Meteorology*

Vlassova, L., Perez-Cabello, F., Nieto, H., Martin, P., Riaño,D., & De la Riva, J. (*In review*). Assessment of methods for Land Surface Temperature retrieval from Landsat-5 TM images applicable to multiscale tree-grass ecosystem modeling. *Remote Sensing*

Guzinski, R., Nieto, H., Jensen, R., & Mendiguren, G. (*Initial submission*). Remotely sensed land-surface energy fluxes at sub-field scale in heterogeneous agricultural landscape and coniferous plantation. *Biogeosciences*

Journals of Public Interest

Pacheco, C.E., Aguado, I., & Nieto, H. (2009) Análisis de ocurrencia de incendios forestales causados por rayo en la España peninsular. *Geofocus. Revista Internacional de Ciencia y Tecnología de la Información Geográfica, 9*, 232-249

Nieto, H., Chuvieco, E., Aguado, I., Yebra, M., García, M., Salas, J., Martín, M.P., Vilar, L., Martínez, J., Padrón, D., & Martín, S. (2008). Propuesta de un sistema espacialmente explícito para evaluar el peligro de incendios. *Serie Geográfica, 14*, 109-130

Martín, M.P., Chuvieco, E., Oliva, P., Verdú, F., Nieto, H., & Padrón, D. (2007). Un ejemplo práctico de aplicación operativa de la teledetección a la gestión de riesgos naturales: Cartografía y evaluación urgente de áreas quemadas en Galicia. *Cuadernos de Investigación Geográfica, 33*, 19-38

Nieto, H., Aguado, I., & Chuvieco, E. (2006). Estimation of lightning-caused fires occurrence probability in Central Spain. *Forest Ecology and Management, 234*, S67-S67

Selected Conference Proceedings

Nieto, H, & Guzinski, R (2013) Retrieval of biophysical properties of vegetation by inversion of PROSPECT+4SAIL using an evolutionary strategy (CMA-ES): comparison of performance using hyperspectral vs. multitemporal data. *In EUROSPEC" Final Meeting*, Trento, Italy

Nieto, H., Guzinski, R., Jensen, R., Sandholt, I., & Jensen, K.H. (2013) TSEBRTM: Coupling a canopy Radiative Transfer model with a Two Source Energy Balance model for the estimation of surface energy fluxes with dual-angle land surface temperature. *In TR32-HOBE International Symposium*. Bonn, Germany

Proud, S., Nieto, H., Guzinski, R., Mendiguren, G., Garcia, M. & Sandholt, I. (2012) Observation of the Earth system with Meteosat Second Generation. *In 2012 EUMETSAT Meteorological Satellite Conference.* Sopot, Poland

Guzinski, R., Anderson, M., Kustas, W. Nieto, H. & Sandholt, I. (2012) Using dual temperature difference two source energy balance model and MODIS data to estimate surface energy fluxes at regional scales in northern latitudes. *In European Geosciences Union General Assembly 2012*. Vienna, Austria

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. *In European Geosciences Union General Assembly 2012*. Vienna, Austria

Mendiguren, G., Martín, M.P., Nieto, H., Proud, S.R., Guzinski, R., Riaño,D. & Sandholt, I. (2011). A comparation of evapotranspiration and evaporative fraction estimates using the triangle method with MSG-SEVIRI, MODIS and LANDSAT 5TM. In *3rd iLEAPS Science Conference*, Garmisch-Partenkirchen, Germany

Martín, M.P., Carrara, A., Echavarría, M.P., Gajardo, J., Gallardo, M., Gimeno C., I. , Gómez, González-Cascón, R. , F.J.,Martínez-Vega, Mendiguren, G. , Nieto, H., Pacheco-Labrador, J., Pérez-Cabello F., Riaño, D., Salas, J. & Vilar, L. (2011). Obtención de información espectral a diversas escalas para la estimación de parámetros biofísicos de la vegetación Mediterránea en el contexto del cambio global (BIOSPEC). In *XIV Congreso de la Asociación Española de Teledetección*, Mieres, Spain

Nieto, H., Sandholt, I., Rasmussen, M..O., Herbst, M., Ringgaard, R. & Friborg,T. (2010). Optical and thermal multiangular measurements for the estimation of evapotranspiration on an eddy covariance flux tower. In *3rd International Symposium on Recent Advances in Quantitative Remote Sensing*, Valencia, Spain

Nieto, H., Sandholt, I., Ringgaard, R., Herbst, M., Stisen, S. & Friborg,T. (2010). Combining ENVISAT AATSR and MERIS imagery for the retrieval of evapotranspiration in a two-source resistance energy balance model. In *Remote Sensing and Hydrology 2010 Symposium*, Jackson Hole, Wyoming, USA

Nieto, H., Aguado, I., Chuvieco, E., & Sandholt, I. (2009). Estimation of National Fire Danger Rating System 10 hour timelag fuel moisture content with MSG-SEVIRI data. In, *7th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires*. Matera, Italy

Jurdao, S., Nieto, H., & Chuvieco, E. (2008). Relación entre el contenido en humedad del combustible vivo y la ocurrencia de incendios en la España Peninsular. In, *XI Coloquio Ibérico de Geografía*. Alcalá de Henares, Spain

Chuvieco, E., Aguado, I., Yebra, M., Nieto, H., Martín, M.P., Vilar, L., Martínez, J., Padrón, D., Martín, S., & Salas, J. (2007). Generación de un Modelo de Peligro de Incendios Forestales mediante Teledetección y SIG. In, *XII Congreso de la Asociación Española de Teledetección*. Mar de Plata, Argentina

Yebra, M., Aguado, I., García, M., Nieto, H., Chuvieco, E., & Salas, J. (2007). Fuel Moisture estimation for fire ignition mapping. In, *IV International Wildfire Conference*. Sevilla, Spain

Nieto, H., Aguado, I., & Chuvieco, E. (2006). Estimation of lightning-caused fires occurrence probability in Central Spain. In D.X. Viegas (Ed.), *V International Conference on Forest Fire Research* (p. 15). Figueira da Foz, Portugal: Elsevier

Yebra, M., Chuvieco, E., Aguado, I., & Nieto, H. (2006). Comparación entre ecuaciones empíricas y modelos de simulación para la estimar contenido de agua en pastizales. In, *XII Congreso Nacional de Tecnologías de la Información Geográfica*. Granada, Spain