Francisco **Zambrano Bigiarini**

ASSOCIATE PROFESSOR

Centro de Observación de la Tierra Hémera, Universidad Mayor

 +56 9684 77864 | frzambra@gmail.com | frzambra.github.io | frzambra | frzambra | frzambra

Some stuff about me

- I poisoned myself doing research.
- I was the first woman to win a Nobel prize
- I was the first person and only woman to win a Nobel prize in two different sciences.

Education

Universidad de Concepción   *Chile*

DOCTOR IN AGRICULTURAL ENGINEERING MENTION WATER RESOURCES   *2013-2017*

- Dissertation title: 'Agricultural drought in Chile: from the assessment toward prediction using satellite data'

Universidad de Concepción   *Chile*

AGRICULTURAL CIVIL ENGINEER   *2000-2006*

- Thesis title: 'Efecto de la aplicacion diferencial de agua y fertilizante sobre la produccion y calidad de la vid cv. Carmenere'

Projects

Fondecyt Regular N°1210526   *2020*

MULTIVARIATE DROUGHT MONITOR SYSTEM: BIOPHYSICAL MODELLING, REMOTE SENSING AND HYDROCLIMATIC INFORMATION   *Co-Investigator*
FOR DROUGHT ANALYISIS AND FORECASTING IN AGRICULTURE

Fondecyt Iniciación N°11190360   *2019*

THE IMPACT OF WEATHER VARIABILITY ON WHEAT AND MAIZE PRODUCTION: AN IMPROVED EARLY WARNING MODEL FOR   *Principal Investigator*
AGRICULTURAL DROUGHT

Fondef Idea I+D 2021 (under review)   *2021*

SISTEMA SATELITAL PARA LA OPTIMIZACIÓN DE RIEGO (SATORI)   *Principal Investigator*

Fondequip Mediano 2021 (under review)   *2021*

UAV CON SENSOR HIPERESPECTRAL DE RANGO COMPLETO (400-2500 NM) PARA LA EVALUACIÓN DE LOS CAMBIOS EN LA   *Principal Investigator*
DINÁMICA VEGETACIONAL Y GEOLÓGICA

Selected publications

1. Zambrano, F. (2021). Four decades of satellite data for agricultural drought monitoring throughout the growing season in Central Chile. In *Drought*. CRC Press. `https://doi.org/Accepted`

2. Jopia, A., Zambrano, F., Pérez-Martínez, W., Vidal-Páez, P., Molina, J., & Mardones, F. de la H. (2020). Time-series of vegetation indices (VNIR/SWIR) derived from sentinel-2 (A/B) to assess turgor pressure in Kiwifruit. *ISPRS International Journal of Geo-Information*, *9*(11), 641. `https://doi.org/10.3390/ijgi9110641`

3. Zambrano, F., Vrieling, A., Nelson, A., Meroni, M., & Tadesse, T. (2018). Prediction of drought-induced reduction of agricultural productivity in Chile from MODIS, rainfall estimates, and climate oscillation indices. *Remote Sensing of Environment*, *219*, 15–30. `https://doi.org/10.1016/j.rse.2018.10.006`

4. Zambrano, F., Wardlow, B., Tadesse, T., Lillo-Saavedra, M., & Lagos, O. (2017). Evaluating satellite-derived long-term historical precipitation datasets for drought monitoring in Chile. *Atmospheric Research*, *186*, 26–42. `https://doi.org/10.1016/j.atmosres.2016.11.006`

5. Zambrano, F., Lillo-Saavedra, M., Verbist, K., & Lagos, O. (2016). Sixteen years of agricultural drought assessment of the biobío region in chile using a 250 m resolution vegetation condition index (VCI). *Remote Sensing*, *8*(6), 1–20. `https://doi.org/10.3390/rs8060530`

Research experience

Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente *Enschede, The Netherlands*

AGRICULTURAL DROUGHT PREDICTION *Sep. 2016 - Dec. 2016*

- We used time-series of satellite dataset MODIS and CHIRPS 2.0 for 2000-2018
- The aim was the prediction of agricultural drought over the 90
- Manuscript published in the journal Remote Sensing of Environment (RSE)

Center for Advanced Land Management Information Technologies (CALMIT), University of Nebraska *Lincoln, NE, USA*

SATELLITE DATASET FOR METEOROLOGICAL DROUGHT *Jan. 2016 - Jul. 2016*

- We used time series of satellite estimates for precipitation
- The aim was to evaluate the performance of those dataset over Chile
- Manuscript published in the journal Atmospheric Research (ATMOS)

Agricultural Research Institute (INIA) *CRI Quilamapu, Chillán*

CONSULTANT *Apr. 2012 - Mar. 2015*

- I worked in drought monitoring using satellite and in-situ climatic data
- I proposed, derived and assess an agricultural drought index to be applied in Chile for agricultural drought monitoring
- The assessment of the index over the Bio-Bio Region in Chile was published on June 2016 in the Remote Sensing Journal

Teaching experience

UNIVERSITY TUTORING

2020 S2 **METE133**: Geoestatistics (Magister en Teledetección, Universidad Mayor)

2020 S1 **METE132**: Introduction to spatial analysis with R (Magister en Teledetección, Universidad Mayor)

2019-2021 **AGRE1001**: Geographic Information Systems (GIS) (Escuela de Agronomía, Universidad Mayor)