

# Doctoral theses of Modeling of the Atmosphere and Solar Radiation (MATRAS) (TEP-220)

**Coordinator: Dr. Joaquín Tovar Pescador (jtovar [arroba] ujaen [punto] es)**

**Banner with images of a sun in space, wind turbines, some clouds, and a view from a satellite of a mountainous area**

The “Modeling of the Atmosphere and Solar Radiation (MATRAS)” research group carries out its activity in the field of meteorology and renewable energies.

This group has the following doctoral theses:

## ***Analysis of the spatiotemporal balancing of solar and wind energy resources in Andalusia. Methods to reduce their power fluctuations***

- Doctoral student: Francisco Santos Alamillos
- Doctoral advisors: Antonio David Pozo Vázquez y Joaquín Tovar Pescador. (Tesis con mención Europea)
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2012

## ***Algorithms and computational processes implementation for improving the solar radiation forecasting reliability***

- Doctoral student: Samuel Quesada Ruiz
- Doctoral advisors: Rafael Segura Sánchez, J. Tovar Pescador Antonio David Pozo Vázquez. (Tesis con mención Europea)
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2015

## ***Estimation of the solar radiation based on satellite images and artificial neural networks***

- Doctoral student: Alvaro Linares Rodrigue
- Doctoral advisors: J. Tovar Pescador Antonio, Jose Antonio Ruiz-Arias
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2015

***Combining MSG cloud estimates and the WRF NWP model dynamic to enhance short-term solar radiation forecasting***

- Doctoral student: Clara Arbizu Barrena
- Doctoral advisors: J.A. Ruiz Arias y Antonio David Pozo Vázquez. (Tesis con mención Europea)
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2017

***Assessment and forecasting of solar resource: applications to solar energy industry***

- Doctoral student: Vicente Lara Fanego
- Doctoral advisors: J.A. Ruiz Arias, J. Tovar-Pescador y Antonio David Pozo Vázquez. (Tesis con mención Europea)
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2017

***Improvements of short-term solar radiation forecasting techniques based on satellite and sky-camera imagery***

- Doctoral student: Francisco Javier Rodríguez Benítez
- Doctoral advisors: Antonio David Pozo Vázquez.
- Thesis with European mention
- Mark: Summa cum laude
- University of Jaen, Physics Department, 2019