

# Conferencia

# SANTALÓ 2019

La Facultad de Ciencias Matemáticas y la Revista Matemática Complutense patrocinan la conferencia anual Santaló, impartida cada año por un profesor de reconocido prestigio. Esta conferencia marca el inicio de la actividad docente e investigadora de la Facultad en cada año académico. El conferenciante de este año es:

## Noel Cressie

National Institute for Applied Statistics Research Australia (NIASRA), University of Wollongong

### Atmospheric carbon and the statistical science of measuring, mapping, and uncertainty quantification

Too much carbon dioxide (CO<sub>2</sub>) in the atmosphere is a threat to long-term sustainability of Earth's ecosystem. Atmospheric CO<sub>2</sub> is a leading greenhouse gas that has increased to levels not seen since the middle Pliocene (approximately 3.6 million years ago). One of the National Aeronautics and Space Administration's (NASA) remote-sensing missions is the Orbiting Carbon Observatory-2, whose principal science objective is to estimate the global geographic distribution of CO<sub>2</sub> sources and sinks at Earth's surface, through time. This starts with the measurement of radiances from individual soundings and moves on to retrievals of the atmospheric state, including CO<sub>2</sub>-related variables. From a mathematical point of view, this is an ill-posed inverse problem for which regularisation is needed. From these spatio-temporal data, gap-filled and de-noised maps and their uncertainties are made. With the aid of a model of atmospheric transport, CO<sub>2</sub> fluxes can be estimated. Uncertainty quantification using hierarchical statistical models is critical at all stages.

**JUEVES, 3 DE OCTUBRE DE 2019, 13:00 HORAS  
AULA S-118 "MIGUEL DE GUZMÁN"  
FACULTAD CC. MATEMÁTICAS**

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