



# Functional and Complex Structure Data Analysis

## Functional and Complex Structure Data Analysis

13th Course in the ECAS Programme  
Castro Urdiales, Spain - September 17-21, 2013

ECAS 2013

### Program ECAS course 2013

### Tuesday, 17th September

#### *Overview of the theory of statistics with functional data*

8:30 - 9:15	Registration	
9:15 - 9:30	Opening of the ECAS-course	<b>Prof. Wenceslao González Manteiga</b> <b>Prof. Juan Cuesta</b>
9:30 - 11:00	Introduction to functional data. The probabilistic basis	<b>Prof. Antonio Cuevas</b>
11:00 - 11:30	<i>Coffee Break</i>	
11:30 - 13:00	Mean, median and mode in the functional setting	<b>Prof. Antonio Cuevas</b>
13:00 - 16:00	<i>Lunch Break</i>	
16:00-17:00	Functional regression, classification and bootstrap (I)	<b>Prof. Antonio Cuevas</b>
17:00-17:15	<i>Break</i>	
17:15-18:15	Functional regression, classification and bootstrap (II)	<b>Prof. Antonio Cuevas</b>

### Wednesday, 18th September

#### *Functional data analysis in R.*

9:30 - 11:00	Computational aspects of functional data	<b>Prof. Manuel Febrero Bande</b>
11:00 - 11:30	<i>Coffee Break</i>	
11:30 - 13:00	Exploratory functional data analysis	<b>Prof. Manuel Febrero Bande</b>
13:00 - 16:00	<i>Lunch Break</i>	
16:00 - 18:00	Functional regression in practice	<b>Prof. Manuel Febrero Bande</b>



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**Thursday, 19th September**

**Short presentations**

<b>9:30 - 11:10</b>	<p><b>María Franco:</b> Uncertainty evaluation in functional kriging with external drift</p> <p><b>Angelina Roche:</b> Non-asymptotic adaptive prediction in Functional Linear Models</p> <p><b>Rosalba Ignaccolo:</b> Heteroskedastic functional regression for atmospheric thermodynamic profiles</p> <p><b>Ludwig Bothmann:</b> Real Time Classification of Fish in Sonar Images (DIDSON)</p> <p><b>Javier Tarrío:</b> Applications of FDA in analytical chemistry</p>
<b>11:10 - 11:30</b>	<i>Coffee Break</i>
<b>11:30 - 13:15</b>	<p><b>Isabella Fabbri:</b> Data depth in parametric FDA approach</p> <p><b>Carlo Sgera:</b> Spatial Depth-Based Outlier Detection for Functional Data</p> <p><b>Paula Raña:</b> Outlier detection in functional data under dependence</p> <p><b>Paula Navarro:</b> Multivariate Outlier Detection Using Random Projections</p> <p><b>Carmen Aguilera:</b> Functional PLS regression: penalized versions</p>

## Friday, 20th September

### ***Analysis of functional Time Series***

<b>9:30 - 11:00</b>	Functional Time Series	<b>Prof. Victor M. Panaretos</b>
<b>11:00 - 11:30</b>	<i>Coffee Break</i>	
<b>11:30 - 13:00</b>	Analysis of stationary functional data	<b>Prof. Victor M. Panaretos</b>
<b>13:00 - 16:00</b>	<i>Lunch Break</i>	
<b>16:00 - 18:00</b>	Advances on functional Time Series	<b>Prof. Victor M. Panaretos</b>

## Saturday, 21th September

### ***Methodology and theory for functional data analysis***

<b>9:30 - 10:30</b>	Methodology and theory for functional data analysis I	<b>Prof. Peter Hall</b>
<b>10:30 - 11:00</b>	<i>Coffee Break</i>	
<b>11:00 - 12:00</b>	Methodology and theory for functional data analysis II	<b>Prof. Peter Hall</b>
<b>12:00 - 12:15</b>	<i>Break</i>	
<b>12:15 - 13:15</b>	Methodology and theory for functional data analysis III	<b>Prof. Peter Hall</b>
<b>13:30 - 15:30</b>	<i>Lunch Break</i>	
<b>15:30 - 16:30</b>	Methodology and theory for functional data analysis IV	<b>Prof. Peter Hall</b>