

Semiparametric statistics, functional data analysis, random effects modeling, set estimation and spatial-temporal statistics are relevant topics within statistics research. In this research project, our aim is to obtain new methodological advances in all these fields, with special emphasis in applications to strategic fields, such as environmental science, finance and small area modeling for Official Statistics.

Many of the new developed methods will be implemented for the first time, or they may be modifications of previous versions, already obtained in former projects. These methods will be validated by theoretical results and simulation studies, and they will be applied to technology transfer problems. We include as such problems, among others: prediction of bidimensional indicators for NO_x and SO_2 in the power plant of As Pontes (ENDESA); goodness-of-fit tests for interest rate models in finance and the small area inference for social-economical indicators for the Instituto Galego de Estatística.