

## ICES Training Course

“Geostatistics to analyse spatially explicit survey data in an ecosystem approach”.

2-6 December 2013, Mines ParisTech Geosciences Center/Geostatistics, Fontainebleau, France.

The ICES Training Course on “Geostatistics to analyse spatially explicit survey data in an ecosystem approach” took place in Fontainebleau (France) 2-6 December 2013 at the Geoscience Centre of Mines ParisTech. This research centre was founded by G. Matheron and is where Geostatistics was developed and continues.

The 5-day course was intense. The major geostatistical modelling approaches were covered: linear, multivariate, non-linear and simulations. This allowed to showcase the interest of geostatistics not only for abundance estimation but also for habitat mapping in the multivariate context of the ecosystem approach.

The mathematics of the methods were presented and illustrated with exercises and examples. The corresponding course materials were power point presentations giving detailed mathematics as well as lecture notes providing an overview of the methods and their connexions.

The different course topics (variography, survey precision of the domain mean, simple and ordinary kriging, multivariate kriging, non-linear kriging, multi-gaussian simulations) were applied on a variety of fisheries (trawl, acoustic, egg) survey data using demonstrative case studies, which had been prepared in advance for the practicals, using the R-package RGeoS of Mines ParisTech (<https://rgeos.free.fr/>). These demos also allowed to transfer Rscripts to participants, who can now use relevant parts of the scripts on their own data. Participants were given the opportunity to do so with practical exercises during the course.

The course was attended by 31 participants from ICES member countries and outside, with Brazil, Iran and Tasmania being also represented. Feedback received after the course concluded that majority of participants appreciated the large overview of geostatistical methods, thus giving tools for more complex habitat mapping. It was agreed to follow up the course by a workshop dedicated to case study applications and participants felt that a similar course should be given regularly, alternating with workshops for analysing practical case studies. Participants were interested in a forum for continued interactions.