

COURSE LEADER

Dr. Isobel Clark

Isobel Clark has taught, researched and consulted in the field of geostatistics for almost 30 years. Possibly best known as the author of the introductory text "Practical Geostatistics" (1979), she is now co-author of a more complete textbook, Practical Geostatistics 2000 which is available as hypertext on CD and as a hardcopy book. Software and data sets are available to all.

Short courses and seminars are offered on a regular basis and, to date, have been hosted by companies and educational institutions on four continents. Dr. Clark lectured for 11 years at the Royal School of Mines, Imperial College, London, at the University of the Witwatersrand in Johannesburg for 9 years and has been Visiting Professor at Camborne School of Mines for 2 years.

In between these academic engagements, she acts as Managing Director and senior partner of Geostokos Limited, an international consultancy company based in Central Scotland.



Her recent consultancy assignments range from the evaluation of tantalite deposits in Mozambique to the study of protected sea-birds in the UK.

<http://uk.geocities.com/drisobelclark>

Previous courses

Carlin course, Nevada January 2004



BYOGE class, Auburn May 2004



Zero to Kriging Queen's Belfast, June 2004

<http://www.kriging.com/whatsnew.htm>

PRICES & PAYMENTS

Zero to Kriging

Per person:
US\$1,350 £750 Euro1,150
Per course:
US\$7,500 £4,500 Euro6,750

BYO Geostatistics

Per person:
US\$1,600 £900 Euro1,350
Per course:
US\$4,800 £2,700 Euro4,050

Discounts:

Book more than one course
10% discount

Payment Methods:

Pro-forma invoice in any currency:

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Fax: 01259-215274
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Credit card payments in £ Sterling:
<http://www.amazon.co.uk/shops/geocosse>

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<http://geocosse.hypermart.net>

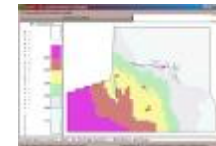
<http://geocosse.hypermart.net>

What is Kriging?

Geostatistics is the name given to a particular group of techniques which model spatial processes and allow estimation of values at *unsampled* locations. Geostatistical estimation is a two stage process:

- i. studying the gathered data to establish the predictability of values from place to place in the study area;
- ii. estimating values at those locations which have not been sampled. This process is known as '*kriging*'.

In mining, geostatistics is extensively used in the field of reserve valuation - the estimation of grades and other parameters from a relatively small set of borehole or other samples.



Geostatistics is now widely used in many other fields. Obviously there are geological and geographical applications. However, the techniques are also used in such diverse fields as hydrology, ground water and air pollution, soil science and agriculture, forestry, epidemiology, management of wildlife and weather prediction.

<http://geostokos.kriging.com/>

Zero to Kriging

Zero to Kriging:

As the name suggests, this course takes interested students from no knowledge of statistics or geostatistics through to the mysteries of ordinary kriging and its variants in 30 hours (or less). This is a classroom course and includes manual exercises to reinforce understanding of the techniques.

WHO SHOULD ATTEND?

This course is aimed at any professionals dealing with the estimation from or interpolation between samples collected on a spatial basis. This is not a course for specialist geostatisticians but intended rather for those who wish to use geostatistics to enhance their practical applications or research.

No prior knowledge of statistics or geostatistics is assumed. A minimum of mathematics is necessary to explain the techniques - mainly simple algebra, up to the concepts of solving simple sets of simultaneous equations and differentiating x^2 .

All lectures will be augmented by desktop exercises covering many different applications and candidates should come equipped with a calculator capable of taking natural logarithms.

Questions and discussions are actively encouraged and, indeed, form the basis of a successful course.

Day 1:
The basic assumptions of spatial estimation methods; Inverse Distance interpolation methods; Classical statistics: the Normal distribution.

Day 2:
Statistical methods: the lognormal distribution; confidence levels; standard errors; grade/tonnage curves.

Day 3:
Geostatistical methods: the experimental semi-variogram; modelling semi-variograms; trends; anisotropy; geological features.

Day 4:
Geostatistical estimation: weighted averages; estimation errors; standard errors; confidence levels; ordinary and simple kriging; cross validation.

Day 5:
Variations on kriging; lognormal methods; indicator methods; non-linear geostatistics; regression problems (conditional bias); simulation.

5 Continuing Education Units (CEUs) accredited by Independent Third Party Review Panel (ITRP)

<http://www.kriging.com/OtoKriging.htm>

<http://geoecosse.hypermart.net> (USA)

Bring Your Own data for Geostatistical evaluation

WHO SHOULD ATTEND?

This course allows participants to analyse their own data using the **Geostokos Toolkit** under supervision.

The course is aimed at geologists, mining engineers, surveyors, biologists, agriculturalists, statisticians, environmentalists and any other professionals dealing with the estimation from or interpolation between samples collected on a spatial basis.

Recent courses have attracted participants with applications varying from sea-bird protection zones, river pollution, pests in orange groves to more traditional(?) applications such as groundwater hydrology and geological resource estimation.

A basic level of knowledge of statistical and geostatistical methods is assumed. For example, previous participants in **'Zero to Kriging in 30 hours'** will find this course eminently appealing. No mathematical expertise is necessary to carry out the analysis. All techniques are illustrated by exercises covering many different applications.

Questions and discussions are actively encouraged and, indeed, form the basis of a successful course. Participants should, if possible, bring their own data for independent study.

Basic computer skills and a familiarity with PC Windows systems are an advantage but not essential.

Participants may take away copies of all software and data sets.

COURSE OUTLINE

Flexible!

All sessions include a mixture of formal lecture, general discussion and hands on computer analysis. The timetable is flexible and is always adjusted to reflect the interests of the class participants.

Day 1, morning:
Introduction to Geostokos Software, Tutorial exercises on statistical and geostatistical analysis using the data sets from Practical Geostatistics 2000.

Day 1, afternoon:
Consideration of statistical distribution and its contribution to interpretation of sample data; identification of multiple components and likely indicator discriminators; lognormal and other distributions.

Day 2, morning:
Construction and interpretation of semi-variograms; identification of trends; multi-component models; confirmation of basic assumptions; outliers.

Day 2, afternoon:
Choice of appropriate kriging techniques; practical applications of kriging; confidence and standard errors.

Day 3:
Case studies from Geostokos Ltd and from course participants; general discussion of case studies; simulation techniques; multi-variable problems and co-kriging.

<http://www.kriging.com/BYOGeostats.htm>

<http://geoecosse.hypermart.net> (USA)