Geostatistical Software Library and User's Guide

by **Clayton V. Deutsch and André G**. Journel.

Review by **Christopher G. Kendall**

This book will be an important text to most of geostatisticians, including graduate students and experts in the field of practical geostatistics. The guts of this volume are the two high-density IBM disks which come with it and contain 37 programs which can be run in both UNIX and DOS environments but are not machine specific. The programs are aimed at three major areas of geostatistics: quantifying spatial variability (variograms), generalized linear regression techniques (kriging), and stochastic simulation. In all there are some 80 source files included with the distribution diskettes. The programs are not execuable but require to be compiled before running them. A machine with a fortran compiler is required. The intent of the authors is to make this suite of programs accessible to anyone who wants to use them. The source code of these programs has been assembled, developed, tested, and tried at Stanford University over a period of some 12 years. Though this library of programs is not intended as a commercial product it represents a gold mine to those who need a jump start into the field of geostatistics.

The text of the book is a guide to the programs, providing a general description of them. It is certainly not a theoretical text book on statistics, but is focused on explaining how the programs on the disks work. These programs are aimed at mapping the spatial distribution of one or more attributes, with the intent of predicting the distribution of these attributes away from areas where they are well known, into areas of poor data. The authors, and students they worked with, have tried to provide a uniform style to the software. This users' guide is written to be understood by all, aiming at clarity of style rather than the description of rococo theories. The intent of authors is that these programs can be used as stand alones or can be broken into segments that can then be tied into one's own custom developed software.

This book is a professionally assembled manual to the attached programs. There are numerous notes and explanations of the different software, with many examples. The execution of each program is discussed along with their parameter files and the nature of data sets needed to run them. There is also the provision of problem data sets to test the programs so they can be better understood. Though this book was not proposed as a text book, it does contain data sets which can be run with the programs, questions that can be asked with them, and contains results from running these programs, suggesting that this book can be used as a laboratory text. Don't let this put you off. These exercises and examples are useful, particularly if you plan to use these programs and need to develop some familiarity with them before you incorporate them into solving your own problems.

Though this book is only 340 pages long, it represents many years of work and provides an insight into the geostatistics that can only be gained through the practical application of the software that is provided with this book. Deutsch, Journel and their students have provided an invaluable service to the geological community by publishing this work. Though the authors disclaim any responsibility for the software and its inherent problems, I am sure that their phones are going to be ringing off the hook for years to come by people asking for help. Clearly the authors have come to recognize that beyond being a creative act, the purpose of writing software is that someone will use it. It is great to have this volume on my shelves and I am sure that those who have interest in geostatistics will not regret purchasing it either.

The software allows users to produce dynamic maps of the observed variables over geographic regions. GeoStats.jl High-performance implementations of geostatistical algorithms for the Julia programming language. GeostatsPy GSLIB and other data analytics and geostatistical functionality for spatial modeling in an open-source Python package.Â GSLIB: Geostatistical Software Library and User's Guide (Applied Geostatistics Series), Second Edition, Oxford University Press, 369 pp., http://www.gslib.com/. ^ ChilÃ¨s, J.-P., and P. Delfiner (1999), Geostatistics - Modeling Spatial Uncertainty, John Wiley & Sons, Inc., New York, USA. ^ LantuÃ©joul, C. (2002), Geostatistical simulation: Models and algorithms, 232 pp., Springer, Berlin. This site provides the latest information on GSLIB: Geostatistical Software Library and related software. The objectives of this web site are to: Point researchers and practitioners to the public-domain GSLIB programs for geostatistical problem solving. Provide the latest GSLIB source code and PC executables to download. Bug fixes and frequently asked questions are updated from time to time. Inform users of a commercial supplement to GSLIB, WinGslib, a Windows interface to GSLIB and related programs. Announce training, support, and consultation opportunities. Although GSLIB comes with no suppo Geostatistical Earth Modeling Software: Userâ€™s Manual. Nicolas Remy May 2004. Contents.Â GEMS, the Geostatistical Earth Modeling Software, is an example of software built from scratch using the GsTL. The source code of GEMS serves as an example of how to use GsTL facilities. GEMS was designed with two aims in mind. The rst one, geared toward the end-user, is to provide a user-friendly software which offers a large range of geostatistics tools: the most common geostatistics algorithms are implemented, in addition to more recent developments such as multiple-point statistics simulation.