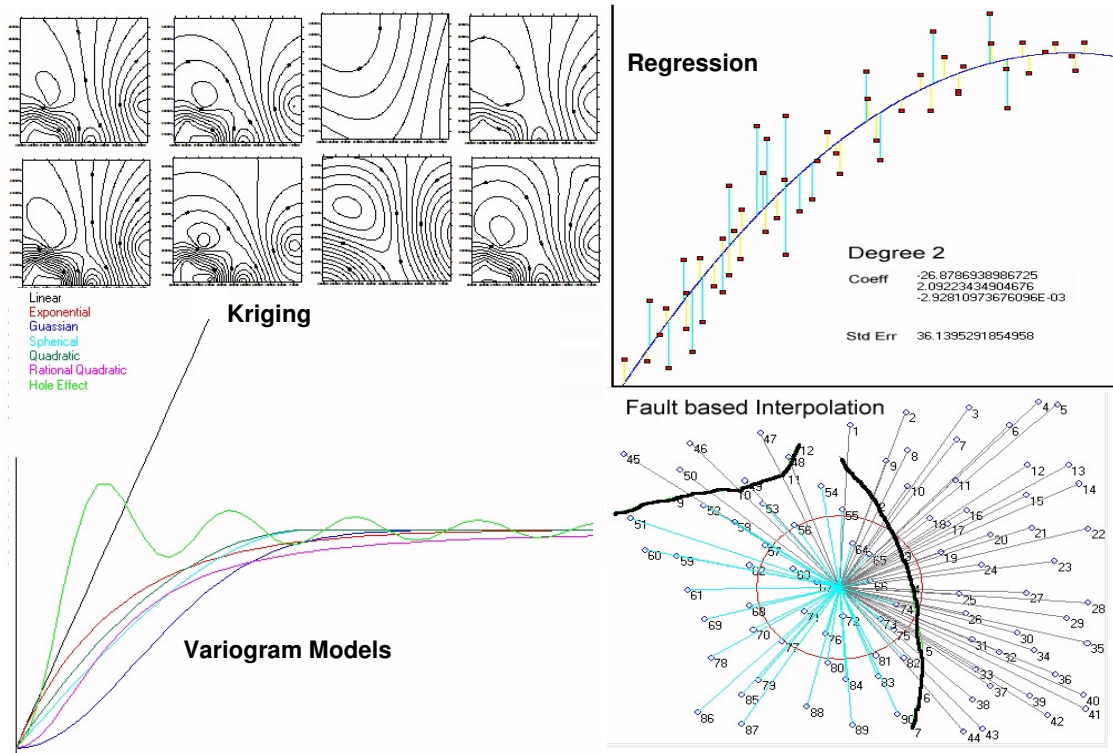# GP-413: Geostatistics for Geoscientists & Reservoir Engineers

Who Should Attend

Geologists, Geophysicists and Reservoir Engineers involved in processing, interpretation, mapping and simulation techniques.

Overview

Geoscientific analyses involve both deterministic as well as probabilistic (stochastic) approaches. Geostatistics includes a range of spatial tools for mapping random variables in a 2D/3D space. Geostatistical techniques are used in; gridding algorithms for contouring as well as reservoir characterization, trend surface modeling of geological structures, establishing rock physics relation using least squares regression and artificial intelligence based facies modeling. This course will give an insight into the foundations of Geostatistics that will help in better modeling and mapping of geoscientific data.

Contents

- Review of Basic Statistical Concepts
- Least Squares Regression
- Nearest Neighbors and Inverse Distance Weighted Averaging
- Trend Surfaces
- Variograms and Kriging Interpolators
- Search Algorithms: Nearest Neighbors, Radius, Anisotropic Ellipse
- Grid & Profile Interpolation
- Faults based Gridding
- Constrained Interpolation
- Kernel based Grid Data Processing: Moving Averages, Derivates, Slope Analysis
- Monte Carlo Simulation