

## INDEX

- Africa, 66, 67
- Algeria, 71, 73
- Analysis of variance, 25, 26, 36, 135
- Arabian Peninsula, 66
- Autocorrelation, 113, 116, 166
- Bessel function, 124
- Beta distribution, 55, 57
- Brownian motion, 82
- C criterion, 33
- Canonical variable, 37
- Chayes-Kruskal procedure, 12, 14
- Chemical analyses, 12
- Classification, 31, 32, 144
- Closed arrays, 13
- Closure test, 11, 14, 16, 17, 21
- Cluster analysis, 32, 144
- Component estimation, 45
- Conditional probability, 45, 58, 60
- Confirmatory data analysis, 2, 169
- Constant sum problem, 20
- Continental drift, 6, 67, 68
- Correlation, 12, 13; 15, 32, 46
- Correlograms, 118, 124
- Covariance, 11
- Cramer-von Mises test, 5
- Cutoff grade, 98
- Data analysis, 144, 163, 169
- Data manipulation, 32
- Decision-making, 144
- Dirac measure, 92
- Discontinuity lines, 66
- Discriminant functions, 144
- Drainage basin, 148, 151
- Eigenvalues, 9
- End-member components, 54
- Entropy, 52, 53
- Equidistances, 64, 66, 69, 74
- Exploratory data analysis, 2, 169
- Exponential, 126
- Filtering, 74, 128
- Fisher's distribution, 3
- Fourier series, 71, 119, 144
- France, 72, 98, 99, 107
- Frequency distribution, 168
- Gaussian distributions, 164
- Geomechanical force, 65
- Geometric density, 149, 150, 151
- Geometrics, 1
- Geomorphic path, see Nearest neighbor sequence
- Geomorphology, 148
- Geophysics, 86
- Geostatistic transitive theory, 99
- Geostatistics, 71, 79, 91
- Germany, 66
- Global estimation (see also Local estimation), 83, 85
- Gold ore deposit, 70
- Granulometric studies, 73
- Gridded data, 23, 26, 101, 118, 130
- Grouping structure, 35, 39
- Hankel-Nicholson type integral, 140
- Harmonic analysis, 121
- Histogram, 128, 153, 158, 163
- Hypersurface, 125
- Illinois, 56, 59
- Independent-events model, see Model
- India, 66
- Intrinsic function, 81, 84, 91
- Jackknife, 169, 172
- Kansas, 64, 113, 130, 172
- Kentucky, 157, 158
- Kolmogorov-Smirnov test, 5
- Kriging, 113, 115, 129, 135, 136, 166

- punctual, 95, 98, 107, 109, 118
- random, 91, 94, 101, 111
- universal, 79, 85, 121
- weighted moving average method, 117
- Laplace's equation, 7
- Large panels, see Panels
- Law of regular structural pattern, 63, 65, 75
- Least squares, 8, 121, 129, 145, 165, 167
- Linear equations, 45, 46, 50
- Linear models, see Model
- Linear prediction, 114, 116
- Local estimation (see also Global estimation), 85
- Log data, 46
- Lorraine iron deposit, 96, 101
- Markov chain, 113, 123, 126, 146
- Mars, 65, 167
- Mathematical geology, 63, 69
- Maximum entropy, see Entropy
- Mean and variance, 4, 13, 167
- Mineral composition, 45
- Minimum variance, 54
- Missouri, 154
- Model, 13, 23, 28, 34, 64, 89, 118, 120, 121, 125, 126, 143, 147, 163
  - independent-events, 146, 148
  - linear models, 8, 24, 26, 93, 144
  - nonlinear, 145
  - stochastic, 146, 159
- Monte Carlo simulations, 13
- Moon, 65
- Nearest neighbor sequence, 150, 153, 156
- Newfoundland, 166
- Nonparametric procedures, 4
- Nonstationary, 85
- Norway, 66
- Nugget effect, 97
- Null hypothesis, 6, 11, 16, 36, 42
- Numerical approximations, 14
- Numerical classification, see Classification
- Numerical taxonomy, 32
- Objective function, 52
- Ore mineralization, 69, 72
- Orientation data, 1
- Orthogonal polynomials, 25, 27
- Panels
  - large, 95
  - small, 101
- Parent correlation, 15
- Partial differential equations, 125
- Pattern recognition, 35
- Petrofabric analysis, 7
- Petrographic work, 19
- Phi units, 74
- Population density, 157
- Porosity, 46, 54, 56
- Potassium argon dating, 6
- Probabilistic
  - approach, 51
  - density function, 2, 55
  - function, 80
  - mechanisms, 89
- Pseudovalue lines, 171
- Punctual kriging, see Kriging
- Q-mode factor, 144
- R criterion, 36, 39
- RF theory, 79
- Random channel networks, 148
- Random functions, 79
- Random kriging, see Kriging
- Random process models, 89
- Random variable, 126
- Randomness, 64, 71, 75
- Range effect, 108
- Ratios, 168
- Regionalized variables, 79
- Regression analysis, 24, 26, 118

- Response surface designs, 23, 27  
Rock magnetism, 5  
Rock properties, 45  
Rootograms, 163, 164  
Sampling, 2, 4, 27, 31, 32, 52, 69, 84, 94, 113, 120, 124, 127, 148, 159  
Schmidt net, 3  
Screen effect, 108  
Screening criterion, 35, 37  
Sedimentary rocks, 45, 54, 56  
Seismic zones, 68  
Shreve's model, 157  
Siberia, 66  
Simpson's three-point rule, 165  
Simulation, see Model  
Small panels, see Panels  
South America, 66, 67  
Space law, 80  
Spatial analysis, 155  
Spectral density function, 119, 124, 127, 140  
Spherical distributions, 5  
Stationarity, 80, 81, 85  
Stationary, 81, 114, 119  
Stochastic models, see Model  
Structural geology, 64  
Sum of squares, 25, 133  
t-process, 170  
Texas, 64  
Three-component system, 47, 60  
Time series, 6, 113, 114, 116, 120, 122, 147, 165  
Topological forms, 148  
Tracers, 89  
Transformations, 20, 119, 120  
Trend analysis, 7, 23, 74, 86, 113, 130, 133, 145  
Trivariate normal methodology, 4  
Uncertainty, 45  
Universal kriging procedures, see Kriging  
USSR, 69  
Variogram, 72, 81, 93, 104, 119  
Volcanic activity, 68  
Weighted least squares, 8  
Whittle's approach, 122  
Wide-sense stationarity, see Stationarity  
de Wijs-Matheron model, 119  
de Wijsian variogram, 81  
Wilks'  $\Lambda$ , 33, 37  
Witwatersrand, 96