

INDEX

A

A Posterior, 56
 A Priori, 56, 113, 163
 Absolute, 149, 165
 Accuracy, 3, 4, 43, 47, 72
 Advanced Hydrologic Prediction System, 147, 150
 Advisory, 197
 Africa, 41
 Agency, vii, 5, 35, 41, 48, 63, 64, 72, 100, 104, 117, 133, 159, 163, 164, 165, 167, 168, 169, 170, 183; Forecast, 46, 72
 AHPS, vii, 91, 147, 150, 197
 Algorithm, 66, 76, 78, 80, 81, 86, 87, 95, 98, 99, 105, 107, 109, 114, 116, 136, 139, 145; Procedural, 78, 80, 82, 86, 87, 95, 98, 99, 105, 107, 113, 114, 117, 125, 136, 174; Search, 113, 117, 145; Solution, 112
 America, 197, 198
 Analysis: Error, 147; Estimation, 3
 Analyze, 4, 16, 21, 37, 38, 73, 78, 105, 197
 Anomaly, 21, 31, 37, 38; Probability, 31; Spatial, 21
 Antecedent, 150
 Application: Multiple, 4, 123, 134, 186, 189
 Approximate, 21, 50, 54, 73
 Archive, 29, 160, 162, 167, 173, 177, 179, 180, 183, 185, 188
 Area, 4, 15, 33, 34, 35, 57, 63, 64, 69, 82, 100, 113, 119, 121, 123, 125, 126, 127, 128, 129, 130, 134, 139, 155, 157, 158, 160, 161, 162, 163, 167, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 186, 188, 189, 191, 192; Basin, 110, 119, 125; Multiple, 123
 Areal Average, 64, 83
 ARMA, 4
 Artifact, 116
 Artificial, 75, 138, 139, 155
 ASCII, 173, 178
 Assume, 7, 27, 30, 49, 104; Implicit, 104
 Atmosphere, 21, 29, 32, 37, 38, 48, 163, 198
 Auto Regressive Moving Average, 4
 Average, 15, 17, 21, 23, 27, 35, 37, 38, 39, 43, 50, 64, 83, 84, 86, 91, 94, 103, 126, 128, 133, 148, 153, 154, 155, 156, 157, 158; Forecast, 153; Sample, 153, 154, 155, 156, 157
 Axioms, 8

B

Band, 19, 20
 Bar, 161, 162, 169

Basic, viii, 138, 139, 147, 165
 Basin, 15, 19, 27, 30, 31, 34, 36, 38, 39, 43, 82, 83, 84, 85, 86, 88, 91, 94, 110, 112, 113, 115, 119, 121, 123, 125, 134, 139, 154, 155, 160; Hydrology, 110; Meteorology, 113; Moisture, 15, 19, 43, 91, 154; Runoff, 15, 43, 91, 155
 Bias, 10, 11, 49, 52, 148, 149, 151, 153; Sample, 12, 53, 153
 Biasing, 4, 5, 49, 51, 53, 56, 61, 71, 77, 133, 150
 Bivariate, 101
 Boundary, 4, 10, 29, 75, 145; Condition, 4, 75
 Britain, 41
 Buildup, 69
 Built In, 22

C

Calculus, 193
 Calibrate, 29, 71
 Canada, vii, 37, 38, 39, 112, 124, 148, 150, 163, 164, 165, 198
 Canadian Meteorology Centre, 37, 38, 39, 163, 164
 Caret, 12
 CDC, 27, 29, 63
 Celsius, 44
 Chance, 10, 17
 Channel: Connecting, 91, 119, 120
 Characteristic: Distribution, 10
 Chronological, 45, 112, 178
 Circulation, 21, 31, 32
 Cleveland, 198
 Climate Diagnostic Center, 27, 29, 63
 Climate Prediction Center, 21, 27, 31, 163
 Climate Transposition, 197
 Cloud, 91
 CMC, 37, 38, 39, 163, 164, 198
 Coaxial Correlation, 4
 Coefficient, 44, 65, 66, 67, 76, 83, 106, 138, 156; Equation, 178; Inclusion, 176; Integer, 156; Sample, 53; Zero, 76
 Color, 22, 29, 30
 Combination, 7, 21, 23, 27, 57, 63, 117, 145, 176, 189
 Command, 159, 160, 161
 Compatible, 46, 72, 110
 Complement, 104, 158, 176, 192
 Complex, 5, 16, 43, 176
 Component, 94, 95, 121, 123
 Composite, 125

Computation: Method, 174, 176, 177, 179, 180, 181, 183, 185, 186, 189; Storage, 145; Time, 145

Compute, 29, 57, 87, 113, 162, 167, 172, 174, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186, 188, 189, 191, 192

Computer, viii, 76, 91, 145

Condition, 4, 15, 29, 30, 31, 33, 34, 43, 45, 47, 49, 56, 71, 72, 73, 94, 96, 97, 101, 107, 115, 119, 135, 136, 150; Antecedent, 150; Necessary, 108, 193

Conditional, vii, 8, 33, 55, 56, 71

Confidence, vii, 11, 34, 100, 147

Configuration, 160, 170; Default, 170

Configure, 170

Conflict, 57, 110

Constant, 66, 153; Integer, 154, 155

Constrained, 78, 80, 107, 133, 154, 193

Constraint, 50, 57, 78, 79, 80, 105, 106, 107, 109, 116, 136, 137, 138, 139, 144, 145, 154, 155, 157, 178; Equality, 106, 113, 136, 137; Inequality, 80, 106, 113, 136, 137; Less Than Or Equal To, 105; Probability, 155; Time, 145; Zero, 80, 81, 107, 109

Convert, 78, 113, 156, 161, 165, 169, 173, 178, 179, 193

Coordinating Committee, 147

Corp of Engineers, 148

Correlation, 10, 11, 52, 53, 148, 149, 150, 157; Canonical, 21, 197; Sample, 12, 157

CPC, 21, 27, 31, 35, 91, 163

Criterion, 117

Critical, 20, 78, 79, 107, 193

Cumulative Probability Distribution, 9, 10, 11, 12, 13, 14, 19, 151, 153, 154

D

Darwin, 198

Database, 169, 170, 178, 179; Forecast, 169, 179

Date: Forecast, 27, 57, 163, 164, 165

Decimal, 87, 95, 99, 113, 125, 139

Decision, vii, 3, 20, 43, 159; Maker, vii, 20, 159

Deduce, 11

Default, 160, 161, 165, 166, 170, 173, 177

Definition: Outlook, 15; Quantile, 165, 170, 176

Degree, 3, 44

Degree Day, 44, 153

Density, 9, 71; Probability, 9, 35, 71, 153

Dependence, 3, 159, 173; Linear, 157

Derivative, vii, 3, 4, 5, 6, 9, 15, 20, 21, 27, 33, 34, 43, 44, 45, 46, 47, 49, 50, 57, 61, 64, 67, 71, 72, 73, 75, 78, 82, 88, 91, 95, 100, 106, 113, 119, 121, 123, 133, 144, 153, 154, 156, 159, 160, 161, 162, 163, 167, 171, 173, 174, 177, 180, 183, 185, 186, 187, 193, 194, 195

Deterministic, 5, 15, 16, 18, 20, 29, 43, 44, 45, 46, 53, 71, 119, 147, 148

Deviation, 77, 78, 113, 135, 193

Diagram, 8, 46, 116, 119, 120

Difference, 11, 33, 37, 38, 101, 133, 139, 149, 150, 153, 154, 155, 157, 170, 174, 176

Differential Calculus, 78, 86, 94, 95, 98, 144

Digits, 54, 87, 95, 99, 113, 125, 139

Direct Access, 178

Directions, 6, 86

Disadvantage, 5, 16, 20, 43, 45, 53

Discrete, 10

Disjoint, 8

Display, 161, 162, 167, 169, 171, 173, 174, 177, 178, 182, 184, 185, 186, 188

Distribution, 9, 10, 11, 12, 19, 22, 30, 33, 70, 73, 78, 90, 148, 149, 153, 157, 165; Bivariate, 101; Empirical, 54; Identical, 12; Joint, 56, 71, 78, 101; Marginal, 71, 101; Probability, 4, 19, 21, 27, 50, 153

Domain, 21, 27; Spatial, vii

Download, 27, 29, 30, 31, 160

Droughts, 4

Dynamic, 198

E

EC, 37, 38, 39, 103, 104, 110, 115, 148, 163, 164, 165, 168, 169, 170, 178

Effects, 33, 147, 150, 197

Efficient, 73

El Niño, vii, 32, 33, 34, 41, 61, 63, 95, 198

El Niño – Southern Oscillation, 33, 198

Elimination, 66, 76, 77, 78, 79, 80, 107, 113, 117, 138, 139; Successive, 80

EMC, 21, 30

Empirical, 54, 198

Empty, 107, 158, 161, 173

Engineer, vii, 3, 4, 5, 21, 107, 148, 198

Ensemble, 3, 29, 30, 31, 37, 38, 61, 63; Approach, 30, 37

Ensemble Products, 30

ENSO, 32, 33, 197, 198

Environment Canada, 37, 38, 39, 103, 104, 110, 115, 148, 163, 164, 165, 168, 169, 170, 178

Environment Canada Meteorology Outlooks: extended, 39

Environmental Modeling Center, 21, 30

Equality: Probability, 133

Equation, viii, 5, 6, 23, 27, 29, 41, 43, 57, 62, 63, 66, 67, 75, 76, 78, 79, 81, 82, 83, 86, 94, 95, 107, 109, 110, 112, 113, 114, 116, 121, 123, 124, 133, 139, 153, 156, 159, 169, 170, 177, 178, 182, 183, 184, 185, 186, 188, 191; Constraint, 79, 138, 157, 178; Incompatible, 116; Infeasible, 77, 113; Probability, viii, 30, 66, 73, 107, 109, 110, 116; Spectral, 198; User Defined, 183

Equations: Intersecting, 77; Linear, 66, 78, 79, 117, 174

Erie, 123, 124, 125, 130, 131, 134, 139, 140, 142, 143, 144, 189

Error, 30, 112, 144, 145, 147, 148, 150, 154, 177; Sample, 144

- ESP, 4, 72, 73, 198
- Estimate, 3, 4, 5, 11, 12, 13, 14, 17, 18, 19, 20, 21, 23, 27, 31, 33, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 64, 67, 69, 71, 73, 78, 80, 82, 83, 90, 91, 94, 103, 113, 119, 123, 125, 139, 153, 154, 155, 156, 157; Probability, 13, 23, 27, 29, 30, 37, 54, 55, 63, 69, 90, 154; Quantile, viii, 13, 22, 23, 37, 94, 113, 124, 125, 139; Statistical, 72
- Estimation, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 47, 51, 52, 54, 56, 73, 147, 150, 154; Parameter, 4; Parametric, 73; Sample, 48
- Evaporation, 44, 91
- Evapotranspiration, 91
- Event, 3, 4, 5, 6, 7, 8, 9, 11, 17, 19, 20, 21, 27, 30, 32, 33, 35, 37, 38, 40, 41, 49, 50, 51, 55, 56, 57, 61, 62, 63, 70, 78, 80, 81, 87, 100, 101, 103, 104, 105, 110, 119, 123, 133, 134, 136, 144, 153, 154, 156, 159, 163, 164, 165, 166, 168, 169, 170, 176, 178, 179, 189, 190, 191, 192; Complex, 176; Critical, 20; Exceedance, 17; Forecast, 17, 35, 103; Hydrology, 3, 4; Meteorology, 5, 6, 33, 48, 53, 56, 61, 63, 73, 86, 87, 94, 95, 103; Multiple, 61, 133, 136; User Defined, 176
- Exceedance, 13, 17, 120, 150; Annual, 3, 4, 13
- Expected Value, 10, 153, 154, 157
- Experiment, 7, 11, 158, 168, 169, 177
- Extended Streamflow Prediction, 4, 72, 73, 198
- Extent: Spatial, 6, 117, 123, 134
- Extreme, 134, 147, 149, 150; Value, 149
- Extremity, 6
- F**
- Feasible, 57, 66, 80, 81, 95, 107, 117, 138, 139
- Filter, 4
- Fit, 4
- Flood, 3, 4; Successive, 3
- Flow, viii, 4, 43, 139; River, 13
- Flower, 7, 11
- Fluctuation: Short Term, 123
- Forecast, vii, viii, 3, 4, 5, 6, 15, 17, 18, 19, 20, 21, 22, 23, 27, 29, 31, 33, 34, 35, 38, 43, 44, 46, 54, 55, 56, 57, 61, 64, 67, 69, 70, 71, 72, 73, 82, 83, 87, 90, 91, 94, 95, 99, 100, 103, 104, 105, 110, 113, 116, 119, 123, 125, 133, 139, 140, 147, 148, 149, 150, 151, 153, 159, 163, 164, 165, 167, 169, 170, 171, 172, 173, 178, 179, 197, 198; Agency, 100, 159, 163, 169; Climate, 164, 169, 197, 198; Coordinated, 148, 150; Derivative, vii, 4, 5, 21, 34, 43, 45, 57, 71, 72, 73, 100, 119, 159, 171; Ensemble, 61, 63; Hydrology, 45, 67, 101; Lake Level, 148; Level, 119, 147; Meteorology, vii, viii, 5, 43, 44, 45, 63, 71, 82, 95, 100, 101, 147, 159, 163, 171, 179; Multiple, 15, 19, 45; Past, 29; Probability, vii, 4, 18, 19, 22, 55, 71, 105, 148, 150, 152, 159; Seasonal, 21, 38, 178, 197, 198; Short
- Range, vii, 30; Spatial, 15; User Selected, 179
- Forecaster, vii, 63, 64, 65, 76, 82, 83
- Format, 161, 163, 169, 177, 178, 179
- Free Software, viii, 147
- Frequency, 4, 7, 13, 33, 34, 48, 49; 50, 51, 54, 61, 76, 78, 101, 103, 104, 133, 135, 154; Flood, 4
- Function, 9, 10, 11, 12, 13, 35, 54, 55, 56, 71, 78, 119, 121, 135, 136, 138, 146, 151, 153, 154, 162, 164, 165, 167, 169, 170, 173, 174, 176, 177, 189, 190, 191, 192, 193; Density, 9, 71; Lagrange, 117; Mapping, 9; Objective, 101, 117, 133, 134, 135, 138, 139, 143, 144, 145, 153, 154, 174, 176, 178, 189, 190, 191, 192; Penalty, 153, 154
- Functions: Linear, 11
- Future, 3, 4, 5, 15, 21, 30, 31, 35, 46, 48, 49, 50, 51, 53, 57, 65, 67, 71, 73, 78, 80, 83, 103, 109, 133, 140, 156, 157, 170, 197; Derivative, 4, 67, 75, 82, 88
- G**
- Gauss-Jordan, 66, 76, 78, 79, 107, 117, 138
- GCM, 21, 38
- General Circulation Model, 21, 38
- Generate, vii, 4, 15, 16, 37, 45, 46, 47, 71, 72, 73, 81, 103, 110, 120, 147, 154, 159, 171
- Generation, 27, 53, 72, 119
- Geological, 197
- Geophysical, vii, 3
- Geopotential, 37
- Georgian Bay, 34, 123, 124, 125, 130, 134, 139, 189
- GLERL, 91, 94, 121, 123, 147, 148, 149, 150, 151, 159, 160, 197
- Global, 21, 30, 37, 38, 198
- Goal, 78, 100, 101, 123, 134, 135
- Great Lakes, vii, 33, 34, 35, 73, 91, 119, 121, 123, 131, 139, 142, 143, 147, 159, 160, 197
- Great Lakes Environmental Research Laboratory, 91, 94, 121, 123, 147, 148, 149, 150, 151, 159, 160, 197
- Growth: Error, 112, 145
- H**
- Heat, 91, 150
- Height, 21, 37
- HPC, 31
- Humidity, 91
- Huron, 34, 123, 124, 125, 130, 134, 139, 189
- Hydraulic, 91, 147
- Hydrograph: Unit, 4, 43
- Hydrologist, 3, 5, 21, 43, 107
- Hydrology, vii, 3, 4, 5, 13, 15, 19, 20, 33, 43, 45, 46, 47, 49, 50, 57, 61, 65, 67, 69, 70, 71, 72, 73, 83, 90, 91, 92, 93, 94, 95, 100, 101, 103, 112, 113, 116, 117, 119, 121, 123, 147, 148, 156, 159, 197, 198; Derivative, 5, 6, 15, 43, 45, 48, 49, 88, 100; Operational, 4, 5, 46,

47, 48, 49, 57, 61, 65, 67, 71, 72, 73, 75, 78,
83, 103, 104, 105, 117, 119, 133, 135, 136,
139, 147, 154, 155, 159, 174, 197; Past, 4
Hydrology Cycle, 197
Hydrometeorology, 31, 198
Hydrometeorology Prediction Center, 31

I

Ice, 38
Impact, 46, 147, 170, 198
Implication, 8, 198
Implicit, 104
Incompatible, 71, 116
Independence, 3, 5, 8, 9, 10, 11, 12, 23, 27, 48,
73, 121, 123, 147, 159; Spatial, 4
Induce, 11, 12, 71, 145
Inequality, 36, 37, 38, 39, 80, 104, 105, 106,
113, 133, 136, 137, 139, 145, 155, 156;
Constraint, 155; Probability, 133
Infeasible, 11, 57, 75, 76, 77, 80, 86, 107, 110,
113
Inference, 4, 11, 12, 13, 47, 48, 49, 51;
Deductive, 11; Inductive, 11, 12
Inflection Points, 193
Information: Content, 20; Coordination, 197;
Display, 178; Low, 16
Installation: Directory, 160, 178; Process, 160;
Software, 160; Wizard, 160
Instruction, viii, 5, 57, 160, 169, 177, 181
Integer, 54, 154, 155, 156, 178
Interactive, 38, 159
Intersect, 158, 176, 191, 192
Iterate, viii, 136, 139

L

La Niña, vii, 32, 33, 34, 35, 41, 61, 63, 95, 99
Lag, 5, 23, 30, 39, 40, 104, 105, 110, 123, 151
Lagrange, 78, 80, 86, 94, 95, 106, 117, 144, 154,
193, 195
Length, 57, 73, 100, 105, 117, 123, 171, 172,
173, 179; Forecast, 171, 172, 173, 179
Level, 3, 20, 100, 119, 120, 123, 125, 131, 139,
140, 142, 143, 147, 148, 149, 150, 151, 153,
154; Water, 120, 123, 131, 142, 143, 147,
197
Level Pool, 123
Likelihood, 7, 8, 11, 16, 17, 56, 154, 165, 168
Linear, 11, 37, 66, 78, 79, 101, 107, 117, 136,
139, 144, 145, 157, 174, 176, 177, 185, 189,
198
Linear Programming, 136, 139, 144, 145, 174,
176, 177, 185, 189, 198
Log-Normal, 73
Long: Lead, 5, 197, 198; Range, vii, 54, 197,
198; Term, 135

M

Management, 197, 198
Manager, vii, 3, 20

Map, vii, 9, 10, 15, 22, 23, 27, 29, 31, 37, 119,
164; Forecast, 27; Probability, 18, 169;
Spatial, vii, 19
Mapping, 9, 22
Marginal, 71, 101, 114, 133
Mass: Probability, 10
Matrix, 66, 94, 113, 125; Derivative, 194, 195
Maximize, 20, 86, 91, 95, 98, 105, 125, 130,
134, 135, 136, 138, 139, 144, 145, 176, 180,
185, 194
Maximum, 13, 31, 78, 91, 107, 137, 138, 144,
148, 150, 193, 194, 196
Mean, 10, 11, 12, 17, 33, 48, 52, 53, 55, 76, 121,
123, 131, 136, 139, 142, 144, 148, 154, 157,
159; Sample, 12, 53, 154, 155, 156, 157
Mean Square Error, 10, 11, 12, 52, 53, 154
Measure, 3, 7, 11, 77, 101, 147, 149, 153;
Probability, 7
Measures: Linear, 101
Median, 17, 18, 19, 134, 151
Melt, 43, 44, 69
Memory, 145; Computer, 145
Menu: Drop-Down, 161
Meteorology: Forecast, viii, 5, 27, 45, 163;
Observed, 71, 72; Outlook, 163; Past, 4, 46;
Selecting, 175; User Defined, vii
Method: Empirical, 198; Forecast, 150;
Simplex, 136, 137, 138, 139, 174
Methodology, vii, viii, 4, 5, 6, 11, 16, 43, 47, 53,
64, 66, 70, 71, 73, 75, 76, 78, 79, 101, 107,
116, 117, 119, 121, 123, 133, 136, 138, 147,
159, 174, 176, 180, 185, 198
Mexico, 18
Michigan, 34, 123, 124, 125, 130, 131, 134, 139,
142, 143, 160, 189, 197
Michigan-Huron, 125, 139, 140, 144
Minimization: Constrained, 78; Unconstrained,
78
Minimize, 3, 6, 77, 78, 80, 101, 107, 113, 117,
133, 134, 135, 136, 138, 139, 145, 148, 174,
176, 193, 194
Minimum, 31, 78, 86, 91, 95, 99, 107, 133, 138,
166, 176, 193, 194, 196
Mix, 7, 10, 57, 103, 105, 108, 110, 123, 130,
133, 162, 167, 172, 174, 175, 176, 177, 178,
179, 180, 182, 183, 184, 185, 186, 188, 189,
191, 197
Mnemonic, 163, 173, 174, 175
Mode, 30, 182, 184, 185, 186, 188
Model, vii, 4, 5, 15, 16, 21, 22, 27, 29, 30, 31,
37, 38, 43, 44, 45, 46, 47, 48, 49, 67, 69, 70,
71, 72, 73, 88, 101, 119, 121, 123, 144, 147,
148, 159, 171, 197, 198; Calibration, 4;
Circulation, 21; Computer, 91; Derivative, 4,
43, 45, 47, 49, 119; Forecast, 21, 27, 30, 31,
198; Hydrology, 3, 4, 43, 70, 71, 72, 73, 91,
94, 147, 148; Output, 30, 37, 43, 71; Spectral,
37, 38
Moisture, 4, 15, 43, 50; Antecedent, 150

- Moments, 73
- Monotonically, 9
- Monte Carlo, 4
- Most-Probable, 5, 6, 17, 19, 21, 35, 37, 38, 39, 41, 61, 101, 103, 104, 105, 110, 119, 123, 133, 136, 158, 159, 163, 165, 168, 169, 170, 178, 179
- Most-Probable Event, 35, 41, 103, 104, 133, 165, 170
- MSE, 10, 11, 12, 52, 53, 154
- Mutually Exclusive, 8
- N**
- National Centers for Environmental Prediction, 21, 29, 30, 31
- National Oceanic and Atmospheric Administration, 21, 22, 27, 29, 30, 31, 32, 35, 48, 61, 62, 63, 82, 83, 91, 103, 110, 114, 116, 121, 123, 148, 160, 163, 164, 165, 167, 168, 169, 170, 179, 197, 198
- National Weather Service, 4, 72, 164, 168
- NBS, 91, 94, 95, 96, 97, 100, 113, 197
- NCEP, 21, 29, 30, 31
- Net Basin Supply, 91, 94, 95, 96, 97, 100, 113, 197
- NOAA, 21, 22, 27, 29, 30, 31, 32, 35, 48, 61, 62, 63, 82, 83, 91, 103, 110, 114, 116, 121, 123, 148, 160, 163, 164, 165, 167, 168, 169, 170, 179, 197, 198
- NOAA Meteorology Outlooks: 1- & 3-month, 21, 22, 23, 27, 30, 32, 48, 57, 61, 82, 91, 103, 110, 116, 162, 163, 164, 165, 166, 167, 169, 170, 174, 175, 176, 177, 178, 179, 180, 183, 185, 186, 188, 189; 1-day, 31; ensemble, 29
- Non-Parametric, 73
- North America, 37, 198
- Northern Hemisphere, 21
- Notation, 7, 61, 67, 71, 153, 193, 195
- Null, 158
- NWS, 4, 72, 164, 168
- O**
- Objective, vii, viii, 6, 101, 117, 133, 134, 135, 138, 139, 140, 143, 144, 145, 147, 148, 153, 154, 174, 176, 178, 189, 190, 191, 192; Alternate, 144; Probability, 136
- Ocean, 21, 38, 198
- Ontario, 15, 19, 197
- Operational Hydrology, 4, 5, 46, 47, 48, 49, 57, 61, 65, 67, 71, 72, 73, 75, 78, 83, 103, 104, 105, 117, 119, 133, 135, 136, 139, 147, 154, 155, 159, 174, 197
- Operator, 153, 156, 157, 158
- Optima: Multiple, 145
- Optimization, 6, 77, 78, 79, 80, 81, 86, 94, 95, 101, 105, 106, 107, 108, 109, 113, 116, 117, 133, 135, 136, 137, 139, 143, 144, 145, 148, 153, 154, 157, 166, 174, 176, 189, 190, 191, 198; classical calculus, 193, 195; Selecting, 176; simplex method, 136, 137, 138, 139; Standard, 135; Successive, 107; Unconstrained, 154, 193
- Optimum, 77, 81, 105, 116, 117, 136, 137, 138, 139, 144, 145, 191, 192, 198; Constrained, 80, 154, 193
- Order, viii, 4, 13, 52, 57, 64, 76, 83, 86, 90, 92, 93, 94, 95, 100, 112, 113, 117, 123, 128, 129, 147, 154, 156, 159, 163, 166, 167, 168, 169, 170, 174, 175, 176, 177, 178, 179, 180, 182, 184, 185, 186, 188, 189, 190, 191; Default, 166; Sample, 13, 52; User Input, 179
- Oscillation, 32, 198
- Outcome, 7, 11, 153, 158
- Outflows, 119, 120
- Outlook, 3, 5, 6, 14, 15, 16, 17, 18, 20, 21, 22, 23, 27, 30, 31, 32, 35, 37, 38, 39, 40, 43, 45, 46, 49, 53, 54, 55, 57, 61, 62, 63, 64, 67, 71, 72, 73, 75, 76, 80, 82, 91, 92, 93, 94, 95, 100, 101, 103, 104, 110, 113, 114, 117, 119, 120, 121, 123, 125, 130, 133, 136, 140, 144, 148, 150, 154, 155, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186, 187, 188, 189, 191; Agency, 63, 117, 133, 163, 164, 165, 167, 168, 170, 183; Climate, 21, 22, 23, 27, 30, 32, 37, 48, 57, 61, 72, 73, 75, 82, 91, 101, 103, 110, 113, 116, 153, 162, 163, 164, 165, 166, 167, 169, 170, 174, 175, 176, 177, 178, 179, 180, 183, 184, 185, 186, 188, 189, 197; Default, 170; Derivative, 3, 5, 6, 20, 27, 33, 43, 46, 57, 61, 64, 71, 72, 91, 95, 113, 119, 123, 133, 144, 156, 159, 160, 161, 162, 163, 167, 171, 173, 174, 177, 180, 183, 185, 186, 187; Derived, 72; Hydrology, 5, 15, 19, 43, 46, 49, 61, 69, 73, 90, 91, 94, 95, 100, 103, 112, 113, 116, 117, 119, 123, 197; Incompatible, 71; Level, 100, 119, 125, 139, 140, 148; Meteorology, 5, 6, 15, 17, 20, 21, 33, 41, 43, 45, 46, 48, 49, 50, 53, 54, 57, 58, 61, 62, 63, 64, 66, 71, 72, 73, 76, 87, 91, 94, 95, 98, 100, 101, 103, 105, 107, 108, 113, 117, 119, 121, 123, 125, 130, 131, 133, 134, 136, 139, 142, 144, 154, 155, 159, 174, 175, 176, 177, 179, 197; Multiple, 22, 53, 61, 63, 101, 110, 117; Probability, 3, 5, 11, 17, 18, 20, 61, 71, 73, 91, 110, 120, 123, 131, 142, 143, 147, 159; Seasonal, 38, 39, 103, 110; Spatial, 119, 123, 134; User Defined, 165; User Selected, 75
- Output, 31, 45, 71, 159, 178, 179
- P**
- Pacific, 32
- Pack, 4, 44, 69, 88
- Parameter, 4, 11, 12, 47, 50, 71, 80, 159, 174; Calibrate, 71; Forecast, 123
- Parametric, 12, 71, 73
- Pattern, 31, 34, 198

Penalty, 78, 106, 153, 154, 157
 Performance: Forecast, 147
 Period: Forecast, 38, 94; Quantile, 178
 Persistence, 21, 27
 Point: Critical, 79, 193
 Precipitation, 10, 15, 17, 18, 19, 21, 22, 23, 27, 30, 31, 33, 34, 35, 37, 38, 39, 43, 44, 46, 50, 54, 55, 61, 63, 64, 69, 72, 82, 83, 85, 87, 91, 94, 100, 101, 103, 104, 110, 112, 123, 127, 129, 134, 139, 148, 153, 155, 157, 163, 164, 165, 168, 169, 170, 173, 176, 178, 179, 198
 Precision, 47, 50, 72
 Precondition, 71
 Predecessor, 5, 81
 Predict, 35, 37, 38, 39, 64, 197, 198
 Predictability, 29, 197
 Pressure, 31, 33, 37
 Principal Components Analysis, 4
 Priority, vii, viii, 57, 76, 82, 83, 94, 95, 100, 107, 112, 113, 117, 123, 147, 159, 163, 166, 167, 168, 169, 174, 175, 176, 177, 178, 179, 180, 182, 184, 185, 186, 188, 189, 190, 191; Default, 166, 170; High, 57, 76, 80, 94, 95; Low, viii, 57, 77, 78, 80, 81, 100, 105, 109, 113, 116, 139, 144, 159; Outlook, 166; Top, 107
 Probability, vii, viii, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, 22, 23, 27, 29, 30, 31, 32, 33, 35, 36, 37, 39, 41, 46, 48, 49, 50, 51, 53, 54, 55, 56, 57, 61, 62, 63, 66, 67, 69, 70, 71, 72, 73, 75, 80, 81, 82, 83, 86, 87, 90, 91, 94, 95, 99, 100, 101, 103, 104, 105, 107, 108, 109, 110, 112, 113, 116, 117, 119, 120, 121, 123, 125, 131, 133, 134, 135, 136, 139, 142, 143, 144, 147, 148, 150, 152, 153, 154, 155, 156, 158, 159, 163, 164, 165, 166, 168, 169, 170, 174, 175, 176, 178, 179, 180, 182, 183, 185, 186, 187, 191, 197, 198; conditional, 8; Conditional, vii, 33, 55, 56; Constrained, 133; Derivative, vii, 4, 5, 49, 82; Estimate, 53, 80; Exceedance, 13; Extreme, 134; Forecast, 20, 22, 29, 34, 46, 55, 61, 70, 90, 91, 104, 133; Generated, 72; Joint, 78, 134; Less Than Or Equal To, 155; Meteorology, vii, viii, 3, 5, 6, 48, 70, 72, 75, 100, 116, 117, 135, 147, 159, 179, 197; Objective, 176, 189, 191; Outlook, 23, 54, 163, 164, 168, 178; Quantile, 103, 169, 170; User Defined, 165, 169, 183
 Problem: Predecessor, 81; Two Stage, 136
 Procedure, 5, 56, 57, 78, 80, 82, 86, 87, 94, 95, 98, 99, 105, 107, 113, 114, 116, 117, 119, 125, 136, 160, 174; Sample, 3
 Process: Derivative, 4; Iterative, 136
 Process Models, 4
 Programming, 145, 174, 176; Linear, 136, 139, 144, 145, 174, 176, 177, 185, 189, 198

Q

Quantile, viii, 11, 13, 14, 17, 18, 19, 22, 23, 30, 35, 37, 48, 52, 54, 57, 64, 70, 83, 87, 90, 91, 92, 93, 94, 95, 99, 103, 113, 120, 123, 124, 125, 131, 139, 140, 142, 143, 154, 157, 158, 165, 169, 170, 176, 178; Forecast, 70, 90; Probability, 55

R

Rainfall, 3, 4, 15, 44, 91
 Random, 9, 10, 11, 12, 13, 17, 47, 48, 49, 50, 52, 53, 62, 65, 83, 153, 154, 155, 156, 157; Sample, 12, 13, 47, 48, 49, 50, 52, 53, 62, 65, 83, 154; Variable, 9, 10, 11, 12, 17, 52, 153, 154, 155, 156, 157
 Ratio, 54, 66, 67, 76
 Realization, 7, 30
 Record, 3, 4, 5, 17, 18, 22, 23, 46, 47, 54, 55, 56, 57, 64, 66, 69, 70, 72, 73, 83, 88, 94, 95, 113, 115, 123, 124, 125, 133, 139, 147, 148, 149, 171, 172, 178, 179; Meteorology, 4, 5, 33, 48, 67, 88, 119, 123, 139, 147, 159; Past, 3, 4
 Redundancy, 75
 Redundant, 23, 27, 57, 75, 76, 77, 81, 86, 116, 177, 182, 184, 185, 186, 189
 Regression, 37; Linear, 37
 Regulation, 91, 119, 120
 Resize, 177
 Resource, 3, 20, 197
 Restrict, 73, 75, 165
 Restructure, 48, 49, 51, 103, 119, 121, 133
 Reverse, 113, 173
 Risk, vii, 3, 20
 RMSE, 148, 149, 150
 Root, 80, 117, 148
 Root Mean Square Error, 148, 149, 150
 Round-Off, 112
 Routing, 119, 120
 Runoff, 4, 15, 17, 43, 44, 48, 50, 69, 90, 91, 92, 93

S

Sample, 3, 11, 12, 13, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 61, 70, 71, 72, 73, 77, 78, 103, 104, 105, 119, 120, 121, 123, 133, 135, 136, 144, 147, 151, 153, 154, 155, 156, 157, 172, 173, 174; Generated, 120; Random, 12, 13, 47, 48, 49, 50, 52, 53, 62, 65, 83, 154; Reconstructed, 49; Structured, 55
 Scenario, 4, 46, 48, 49, 50, 51, 52, 53, 54, 55, 65, 66, 67, 71, 73, 75, 77, 78, 80, 82, 83, 86, 87, 88, 98, 103, 105, 109, 113, 114, 119, 120, 123, 125, 133, 147, 154, 155, 156, 157, 159, 171, 172; Derivative, 5, 67, 119, 121, 123; Hydrology, 4, 47, 48, 49, 71, 118, 147; Level, 120; Meteorology, 46, 48, 119, 121, 147, 171, 172
 Screen, 169
 Search, 113, 116, 117, 137, 138, 145

Seed, 7, 11
Seepage, 44
Segment, 4, 45, 46, 47, 49, 57, 65, 67, 69, 71, 72, 73, 82, 83, 87, 88, 94, 95, 99, 115, 123, 125, 136, 139, 144, 145
Segments: Meteorology, 5
Seiche, 123
Sequence, 148
Sequences: Meteorology, 148
Set, vii, 4, 5, 7, 8, 9, 13, 17, 19, 21, 33, 47, 48, 50, 51, 52, 53, 54, 55, 57, 63, 65, 66, 67, 76, 77, 78, 80, 82, 83, 86, 88, 94, 95, 98, 100, 103, 104, 105, 107, 113, 115, 116, 119, 121, 123, 125, 133, 136, 137, 138, 139, 145, 147, 154, 156, 157, 158, 159, 161, 162, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 176, 177, 179, 180, 183, 185, 186, 188, 189, 191; Constraint, 137, 139; Empty, 158; Equation, 57, 63, 78, 80, 107, 123, 138; Null, 158; Structured, 50, 51, 52, 53, 54, 55, 154, 156, 157
Short: Range, 30; Term, vii, 123
Sidebar, viii, 5, 113, 160
Simplex, 136, 137, 138, 139, 174
Simulate, 4, 27, 29, 30, 31, 43, 45, 46, 47, 49, 57, 71, 73, 94, 101, 119, 147, 148, 159, 162, 171, 172, 173, 174, 175, 177, 178, 179, 186, 188
Simultaneous, vii, viii, 4, 18, 57, 66, 75, 76, 114, 119, 123, 125
Site, vii, 22, 23, 27, 29, 30, 160
Size, 12, 51, 52, 54, 73; Sample, 13, 51, 61, 70, 73
Skill, 21, 43, 45, 53, 148, 149, 150, 198
Slack, 106, 107, 113, 137, 138, 156
Slope, 144
Snow, 4, 38, 43, 44, 69, 88, 153
Snowmelt, 44, 45, 67, 82, 88, 100, 153; Derived, 44
Software, viii, 6, 27, 57, 95, 113, 125, 139, 159, 160, 161, 166, 169, 170, 173, 178; Computer, viii; Installation, 160
Soil, 4, 50
Solution, viii, 6, 43, 57, 67, 75, 76, 77, 78, 79, 80, 81, 86, 94, 98, 101, 105, 107, 112, 113, 116, 117, 123, 125, 133, 135, 136, 137, 138, 139, 144, 145, 147, 159, 174, 176, 177, 185, 189, 192, 193, 194, 196; Empty, 107; Extreme, 134; Infeasible, 110; Multiple, 6, 57, 77, 79, 86, 144, 145; Simultaneous, 66, 75, 79, 105
Sort, 159
Space: Constraint, 116, 145
Spatial, vii, 4, 6, 15, 18, 19, 21, 46, 117, 119, 123, 130, 134
Spectral, 37, 38, 198
Stability, 147
Start: Date, 57, 71, 72, 73, 123, 164, 167, 171, 172, 173, 178, 179; Forecast, 73, 171, 172, 173, 179; Period, 172; Year, 172, 179
Statement: Probability, vii, 36, 37, 39, 57, 67, 91, 103, 112, 113, 123, 136, 163, 165, 166, 169, 174, 175, 176, 180, 182, 183, 185, 186, 187, 191; User Defined, 170
Stationarity, 3
Statistic, 5, 52, 53, 56, 72, 73, 197; Sample, 73
Storage, 19, 50, 91, 150
Storm, 43, 123
Streamflow, 197, 198
Successive, 3, 11, 23, 30, 39, 45, 66, 80, 107, 110
Sufficient, vii, viii, 4, 6, 30, 47, 50, 54, 73, 78, 107, 119, 193, 194, 195, 196; Condition, 6, 78, 107, 193, 194, 196
Superior, 27, 30, 31, 34, 36, 37, 38, 39, 82, 83, 84, 85, 86, 88, 91, 94, 95, 96, 97, 100, 110, 112, 113, 115, 119, 123, 124, 125, 130, 131, 134, 139, 140, 142, 143, 144, 151, 152, 155, 157, 158, 159, 160, 189
Supposition, 13
Surface, 15, 17, 21, 31, 37, 38, 39, 48, 50, 91, 145, 156, 198; Complex, 43; Lake, 91
Survey, 197
Sustainability, 197
Symbol, 6
System: Integrated, 91
T
Tahiti, 33, 198
Target, 7, 8, 11, 12, 158; Population, 12; Space, 7, 8, 11, 158
Teleconnection, 21, 27
Temperature, 4, 10, 15, 17, 21, 23, 27, 31, 33, 34, 35, 37, 38, 39, 43, 44, 46, 48, 49, 50, 61, 63, 64, 69, 82, 83, 84, 86, 87, 91, 94, 95, 100, 101, 103, 110, 112, 114, 121, 123, 126, 128, 133, 134, 148, 153, 155, 156, 157, 158, 163, 164, 165, 168, 169, 170, 173, 176, 178, 179, 198
Temporal, 3, 15, 19, 46, 117, 123
Tercile, 27, 29, 63
Texas, 37, 198
Theorems, 11
Theory, vii, viii, 4, 5, 6, 116, 145; Probability, 9, 198
Thermodynamics, 91
Time, vii, viii, 3, 4, 5, 15, 17, 27, 29, 33, 34, 40, 45, 46, 47, 49, 50, 51, 54, 57, 65, 67, 69, 71, 72, 73, 76, 80, 82, 83, 87, 90, 91, 94, 95, 99, 105, 112, 113, 115, 119, 120, 123, 124, 125, 136, 139, 144, 145, 147, 148, 150, 151, 160, 161, 167, 168, 171, 172, 173, 174, 176, 177, 179, 180, 185, 186; Period, vii, 5, 40, 48, 50, 83, 112; Scale, vii, 5; Series, 3, 4, 5, 15, 45, 46, 47, 49, 50, 57, 65, 67, 69, 71, 72, 82, 83, 87, 90, 91, 94, 95, 99, 113, 115, 119, 120,

123, 124, 125, 136, 139, 144, 171, 172, 173, 174, 176, 177, 179, 186
 Tool, 5, 48, 169, 173, 176, 178, 179
 Trade-Off, viii, 144
 Transform, 4, 15, 43, 45, 48, 49, 69, 91, 94, 95, 96, 97, 120, 136, 139, 147, 156
 Transformation, 5, 6, 15, 43, 45, 61, 73;
 Derivative, 44, 46
 Trend, 3, 16, 34
 Tropical, 21
 Tutorial, viii

U

Unbiased, 3, 5
 Uncertainty, vii, 3, 4, 71, 197; Model, 4
 Unconstrained, 78, 154, 193
 Uniformity, 3
 Unimodal, 35
 Union, 8, 158, 176
 Unit Hydrograph, 4, 43
 Unordered, 13, 92, 93
 User, vii, viii, 3, 20, 46, 57, 86, 100, 117, 147, 148, 165, 169, 176, 183, 198; Defined, vii, 100, 163, 165, 170, 173, 176, 183; Graphical Interface, viii, 159; Input, 169, 178, 179

V

Variable, 3, 9, 10, 11, 12, 13, 15, 17, 18, 19, 21, 23, 27, 43, 45, 46, 48, 50, 51, 52, 53, 54, 55, 57, 62, 63, 64, 65, 66, 67, 71, 73, 75, 76, 78, 79, 83, 86, 94, 95, 100, 103, 104, 105, 106, 107, 113, 121, 123, 136, 137, 138, 139, 155, 156, 157, 165, 169, 176; Basic, 138, 139; Forecast, 17; Hydrology, 4, 47, 48, 49, 57, 91, 94, 119, 121, 156; Meteorology, vii, 5, 14, 46, 48, 49, 61, 94, 133, 178; Multiple, 15, 18, 53; Prognostic, 38; Random, 9, 10, 11,

12, 17, 52, 153, 154, 155, 156, 157; Slack, 107, 113, 137, 138, 156
 Variables: Derivative, 50, 67, 121
 Variance, 10, 11, 52, 53, 55, 157; Sample, 12, 155
 Vector, 63, 65, 66, 70, 71, 75, 79, 94, 107, 193, 194, 195
 Venn Diagram, 7
 Verify, 125, 139

W

Water, vii, 3, 4, 5, 15, 17, 20, 21, 44, 48, 50, 91, 119, 120, 123, 131, 142, 143, 147, 153, 156, 197, 198
 Water Resource, vii, 3, 5, 20, 21, 197, 198
 Watershed, 4, 15, 43, 44, 45, 48, 71, 91
 Weather, vii, 29, 32, 115, 123, 134, 148, 150, 197, 198
 Web, 27, 29, 30, 31, 160
 Weight, 5, 10, 51, 54, 57, 65, 66, 67, 69, 72, 73, 75, 77, 78, 80, 81, 82, 83, 86, 87, 88, 91, 95, 99, 101, 104, 105, 107, 109, 113, 117, 121, 123, 124, 125, 130, 133, 135, 136, 139, 144, 145, 147, 148, 149, 153, 156, 159, 160, 161, 162, 167, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194; Sample, 51, 57
 Weights, 57, 67, 82, 87, 104, 159, 160, 161, 162, 167, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 182, 183, 184, 185, 186, 187, 188, 189, 191; Estimation, 54; Zero Valued, 80
 Wind, 91, 123
 Windsor, 197
 Winter, 33, 34, 35
 World Wide Web, 21, 159