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## Book Review

# ENCYCLOPEDIA OF ENVIRONMETRICS

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The *Encyclopedia of Environmetrics* volume 6 includes 67 articles well structured. The entries are from S to Z:

*Standard error* – a brief presentation of this measure of the variability of statistic around is provided.

*Standards, environmental* – describe the past, present and future techniques by which environmental standards are established.

*State-space methods* – the state space models and methods are presented.

*Statistical computing in environmental science* – programming of computer routines for modeling of processes, statistical analyses of collected data, utilization of dedicated computer packages for the storage, integration and visualization of environmental data and utilization of internet are discussed.

*Statistical graphics* – is focused on the connections to statistics and the results.

*Stochastic model* – sources of random error and examples of stochastic and deterministic models are presented.

*Stochastic process* – is focused on random walk and Brownian motion, stochastic differential equations and diffusions, branching and stationary processes, point processes and point random fields.

*Stochasticity* – a brief presentation is provided.

*Subjective probability* – the theories of probability, pros and cons of subjective probability and role in environmetrics are discussed.

*Subset selection* – general properties of subset selection are presented, a comparison of the two approaches of Bechhofer and Gupta is provided and some generalizations and modification are indicated.

*Superfund site, US* – presentation of superfund site is provided.

*Surveillance, environmental* – describes categories of surveillance and a method used in Sweden.

*Survival analysis* – mathematical method is presented.

*Sustainability* – economic impact (natural resource utilization), environmental impact (fossil fuel combustion and climate change) and social economic environmental interactions are discussed.

*Switching process* – a brief presentation of the process is provided.

*Systematics, numerical methods* – provide a description of different algorithms and search strategies, some special features of some software packages are discussed.

*Tail dependence functions, statistical inference for* – nonparametric and parametric inferences and asymptotic independence are presented.

*Temporal change* – seasonal models and models without cyclical terms are described.

*Teratogenesis, environmental* – some studies are discussed.

*Tessellations* – Voronoi, Delaunay, Johnson-Mehl, Hyperplane Tessellations are explained.

*The International Biometric Society* – a history of this society is provided.

*The International Environmentric Society* – structure of the society, conferences and awards, publications and communications are presented.

*Three-state carcinogenicity model* – a variety of scenarios are described in the article.

*Threshold models* – univariate and multivariate models are described.

*Thresholds, ecological* – include information about exploratory and subjective analyses, continuous and discontinuous thresholds, nonparametric and semiparametric approaches.

*Time series* – models for stationary time series, state-space models are presented, frequency analysis is discussed.

*Time series, ecological* – explanation of time series utilization in modeling population dynamics.

*Time series, periodic* – periodic models and PARMA properties are discussed.

*Toxic substances control act, US* – presentation of the legislation is provided.

*Toxicology, environmental* – include historical remarks, context for study, some illustrations from aquatic toxicology studies, description of the test system, some information about hypothesis testing.

*Trace gas emissions* – the methods for measuring the trace gas emissions, the objectives of measurement programs are presented.

*Trace level detection* – mathematical calculation is provided.

*Transformation, multivariate* – some calculation techniques are discussed.

*Transmission/disequilibrium test* – some test statistics are reviewed.

*Trawl surveys* – vessels and gear are presented; sampling designs, field procedures and utilization of data are explained.

*Tree morphology* – include information about tree bole, tree crowns, root systems and allometrics.

*Tree structured methods* – tree models are explained.

*Trend analysis* – structural time series models are described.

*Trend detecting* – test for linear trend designed and nonparametric tests for trend are explained.

*Trend tests for binary data* – a brief presentation of the tests is provided.

*Trimming and winsorization* – estimators of location, parameters, robustness properties are presented.

*Turbulent diffusion* – fluid mechanics, concentration of a scalar, statistics of the concentration field, dispersion of fluid particles are discussed.

*Uncertainty analysis* – is focused on views of uncertainty, statistics and analysis of uncertainty.

*Uncertainty and computer models* – some issues and problems involved in uncertainty quantification and computer models are outlined.

*Uncertainty quantification, physical models* – attribution of uncertainty is discussed.

*Up-and-down design* – asymptotic behaviour and convergence, basic up-and-down variants, stopping rules and sample size are described.

*Utility theory* – different types of utility models are provided, the utilization of utility theory is discussed.

*Validation studies* – a brief presentation of the validation studies utilization is provided.

*Variable selection via regularization* – is an introduction of variable selection via least squares and penalized likelihood approaches.

*Variogram* – spatial process of random variables and cross variograms are described.

*Variogram estimation* – variogram parameters and methods are explained.

*Waiting time* – the waiting time problem and paradox are presented.

*Waste to energy technologies* – waste classification are presented, waste treatment technologies for utilization of waste as fuel are described.

*Water bodies* – a presentation of lakes, rivers and streams, estuaries is provided.

*Water quality assessment and European Water Framework Directive* – an overview of the European regulatory framework is provided, also pollutants and standards are discussed and statistical challenges are presented.

*Water supply and treatment* – global water supply issues, sustainable water treatment, water-energy nexus, current technological advancements, water recycle and reuse are discussed.

*Wavelet based trend detection and estimation* – include presentation of wavelets as useful tool for analysis of trend.

*Wavelets* – is focused on applications of wavelets.

*Weather prediction* – the weather forecasts preparation and the predictability limit are explained.

*Weibull distribution* – some of the results on the Weibull distribution that deal with aspects like characterization, role in extreme value theory and inferential methods are presented.

*Weighted distributions* – ten examples which illustrate different situations generating weighted distributions and their applications are provided.

*Wildfire risk analysis* – the analysis of wildfire risk, wildfire hazard and risk, wildfire phenomena and elements at risk, the concept of wildfire regime, prediction of wildfire hazard, characteristics of elements at risk are discussed.

*Wildlife ecology* – a brief presentation of this discipline is provided.

*Wind turbines, birds and bats* – explain what is a wind turbine, enigma of wind turbines is presented and fatality calculation is provided.

*Z-statistic* – mathematical calculation is provided.

*Zero-inflated count time series* – an approach for modeling the time series features of the counts and the zero inflation.

*Zero-inflated data* – various methodological and applied issues associated with zero inflated data are presented.

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