REFERENCES

Abrahart, J. R., See L. and Kneale, P. E. (1999) Applying saliency to neural network rainfall modeling. http://www.geovista.psu.edu/geocomp/geocomp99/Gc99/003.

Agarwal, A. and Singh, J. K., (2001) Pattern and batch learning ANN process in rainfall modeling. *Indian association of hydrologists*, *Journal of Hydrology*, Vol. 24, no.1, pp.1-14.

Alexander, G., Parlos, Fernandez, B., Atiya, A. F., Muthusami, J., Tsai, W. K. (1994) An accelerated learning algorithm for multiplayer perceptron networks, *IEEE Transactions on Neural Networks*, Vol.5, no.3, pp.493-497.

Alley, W.M and Burns, A.W. (1983) Mixed extension of monthly streamflow records, *Journal of Hydraulic Engineering*, Vol.109, no.10, pp.1272-1284.

Al-Zahrani, M. and Hussein, T. (1998) An algorithm for designing a precipitation network in the southern-western region of Saudi Arabia, *Journal of Hydrology*, Vol. 205, pp.205-216.

Ahmed, N. A. and Gokhale, D. V. (1989) Entropy expressions and their estimators for multivariate distributions, *IEEE Transactions on Information Theory,* Vol. 35, no.3, pp.688-692.

Amorocho, J. and Espildora, B. (1973) Entropy in the assessment of uncertainty in hydrologic systems and models, *Water Resources Research*, Vol.9, no.6, pp.1511-1522.

ASCE Task Committee (2000a) Artificial neural networks in hydrology I: Preliminary concepts, *Journal of Hydrologic Engineering*, Vol. 5, no.2, pp.115-123.

ASCE Task Committee (2000b) Artificial neural networks in hydrology I: Hydrologic applications, *Journal of Hydrologic Engineering*, Vol. 5, no.2, pp.124-137.

Balek. J. (1972) An Application of the inadequate hydrological data of the African tropical regions in engineering design, *Proceedings of the Second International Hydrological Symposium*, Fort Collins, Coloroda, USA, pp.95-96.

Battiti, R. (1994) Using mutual information for selecting features in supervised neural networks learning, *IEEE Transactions on Neural Networks*, Vol.5, no. 4, pp.537-550.

Beale and Little (1975) Missing values in multivariate analysis, *Journal of the Royal Statistical Society*, Vol. 37, Series B, pp.129-146.

Bennis, S., Berada, F. and Kang, N. (1997) Improving single-variable and multivariate techniques for estimating missing hydrological data, *Journal of Hydrology* 191, pp.87-105.

Berkowitz, D., Ben-Zvi, M. and Berkowitz, J. (1992) A spatial time dependent approach of hydrological data, *Journal of Hydrology* 35, pp.129-142.

Chapman, G. (1985) Entropy as measure of hydrologic data uncertainty and model performance, *Journal of Hydrology*, Vol. 93, pp.111-126.

Chiew, F. H. S., Murray, C. P. and Western, A. W. (2002) Chap 12. Application and Testing of single Rainfall-Runoff model DIMHYD. In: Singh, V. P., and Frevert, D. K. (eds) *Mathematical Models of Small Watershed Hydrology and Applications*, *Water Resources Publications*, pp. 335-367

Chiu, L., C. (1987) Entropy and probability concepts in hydraulics, *Journal of Hydraulic Engineering*, Vol.113, no.5, pp.583-600.

Chow, V. T. (1964) Handbook of applied hydrology, Compendium of Water Resources Technology. McGraw-Hill, Inc.

Chen, D.S., and Jain, R.C. (1994) A robust BP learning algorithm for function approximation, *IEEE Transactions on Neural Networks*, Vol. 5, no.3, pp.467-479.

Corne, S., Kneale, P., Openshaw S. and See L. (1998) The Use and evaluation of ANNs in flood forecasting. http://www.ccg.leeds.ac.uk/simon/maff98.htm.

Dawson, C. W. and Wilby, R. (1998) An artificial neural network approach to rainfall-runoff modeling, *Hydrological Sciences Journal*, 43(1), pp.47-66.

Dempster, A. P., Laird, N. M. and Rubin, D. B. (1977) Maximum likelihood from incomplete data via the EM algorithm with discussion, *Journal of the Royal Statistical Society, Series B,* Vol. *39*, pp.1-38.

Demuth, H. and Beale, M. (1998) MatLab-neural network Tool Box. User's Guide, version 2, Mathworks, Inc.

Deo, M. C. and Thirumalaiah, K. (2000) Real-time forecasting using neural networks, In Govindaraju, R. S. and Rao, R. A.(eds) *Artificial Neural Networks in Hydrology*, Kluwer academic publishers, Dordrecht, Boston, London, Vol.36, pp. 53-71

Eshorbagy, A. A., Panu, U.S. and Simonovic, S. P. (2000a) Grouped–estimation of missing hydrological data: I. Approach and general methodology, *Hydrological Sciences Journal*, Vol. 45, no.6, pp.849-866.

Eshorbagy, A. A., Panu, U.S., Simonovic, S. P. (2000b) Grouped–estimation of missing hydrological data: II Application to streamflows, *Hydrological Sciences Journal*, Vol. 45, no.6, pp.867-880.

Eshorbargy, A., Panu, U. S. and Simonovic, S. P. (2001) Analysis of cross-correlated chaotic streamflows, *Hydrological Sciences Journal,* Vol. 46, no.5, pp.1-14.

Feldman, A. D., (1972) Evaluation of drought effects at Lake Atitlan. *Proceedings of the second International Hydrological Symposium*, Fort Collins, Colorado, USA, pp. 238 - 251.

Freeman, J. A. and Skapura, D. M., (1991) Neural Networks: Algorithms, Application and Programming Techniques. Reading Mass: Addison Wesley Publications Company, Inc.

French, N., Krajewsky, F., and Cuykendall, R. (1992) Rainfall forecasting in space and time using neural network. *Journal of Hydrology*, Vol. 137, pp.1-31.

General FAQ #25 (1999) handling missing or incomplete data, Statistical services, pp.1-11, http://www.utexas.edu/ec/facqs/stat/general/gen25.html.

Goodier, C. and Panu, U. (1994) Infilling missing monthly streamflow data using a multivariate approach, In: Hipel, K.W. et al. (eds.), *Stochastic and Statistical Methods in Hydrology and Environmental Engineering*, Vol. 3, Kluwer Academic Publishers, Netherlands, pp.191-202.

Gyau-Boaye, P. and Schultz, G. A. (1994) Filling in runoff time series in West Africa, *Hydrological Sciences Journal*, Vol.39, no.6, pp.621-637.

Haan, C. T. (1977) Statistical methods in hydrology, The Iowa State University Press.

Hagan, M.T, Demuth, H.B., Beale, M., (1996) Neural network design. PWS Publishing Company, 20 Parlk Plaza Campany.

Harmancioglu, N.B. and Yevjevich, V. (1987) Transfer of hydrologic information among rivers points. *Journal of Hydrology*, Vol. 93, pp.103-118.

Harmancioglu, N.B, Alpaslan and Singh, V.P, (1994) Assessment of the entropy principle as applied to water quality monitoring network design. In: Hipel, K.W. et al.(eds), *Stochastic and Statistical Methods in Hydrology and Environmental Engineering*, Vol. 3, Kluwer Academic Publishers, Netherlands, pp.135-148.

Harmanciouglu, N.B., Fistikoglu, O., Ozkul, S.D., Singh, V.P., Alpaslan, M.N. (1999) Water quality monitoring network design, *Water Science and Technology Library*, Vol. 33, Kluwer Academic Publishers, the Netherlands.

Hashino, M. (1992) Similar Storm Method on filling data voids. *Proceedings of the second International Hydrological Symposium*, Fort Collins, Colorado, USA, pp. 161-173.

Hines, J. W. (1997) MATLAB supplement to fuzzy and neural approaches in engineering, *Adaptive and Learning Systems for Signals Processing, Communication and Control*, Johnson Wiley & Sons, Inc.

Hirsch, M.R., (1979) Evaluation of some records reconstruction techniques. *Journal of Hydrology,* Vol.15, no.6, pp. 1781-1790.

Hirsch, M.R., (1982) Comparison of four streamflow methods extension techniques, *Water Resources Research*, Vol.18, no.4, pp.1081-1088.

Hu, T. S., Lam, K.C. and NG, S.T., (2001) River flow time series prediction with a range-depend neural network, *Hydrological Sciences Journal,* Vol. 46, no.5, pp.729-745.

Hughes, D. A. and Smakhtin, V. (1996) Daily flow time-series patching or extension: a spatial interpolation approach based on flow duration curves, *Hydrological Sciences Journal*, Vol.41, no.6, pp.851-871.

Ibrahim, J. G. (1991) Incomplete data in generalized linear models, *Journal of the American Statistical Association*, Vol. 85, no.411, pp.765 -769.

Ilunga, M. (2002a) Real-time forecasting of the Mtera-Kidatu reservoir system. M.Sc. Dissertation, University of Dar es Salaam, Tanzania, Published *in ASCE Conference Proceedings on Managing the Extremes: Floods and Droughts,* Ranoeke, Virgina.

Ilunga, M. and Stephenson, D. (2002b) Performance of hydrological data infilling techniques using entropy approach: backpropagation (BP), BP-with momentum and EM algorithms, *IET-IAHR International Conference Proceedings on Water the Blood of the Mankind*, Arusha, Tanzania pp.149-157.

Ilunga, M. and Stephenson, D. (2003a) Performance of hydrological data infilling techniques using entropy approach: expectation maximization algorithms, *11 th South African National Hydrology Symposium*, Port Elizabeth, South Africa.

Ilunga, M. and Stephenson, D. (2003b) Entropy measures for comparing flow simulation models at Bedford site, *Journal of Hydrology*, under review.

Ilunga, M. and Stephenson, D. (2005) Infilling streamflow data using backpropagation (BP) artificial neural networks: Application of the standard BP and pseudo Mac Laurin power series BP techniques, *Water SA Journal,* Vol., no. 2, pp. 171-176.

Ilunga, M. and Stephenson, D. (2004) Flow simulation model performance assessment using entropy approach, *Proceedings of the International Conference on Water Resources of Arid and Semi Arid Regions of Africa (WRASRA)*, Gaborone, Botswana, pp. 23-27.

Jamshidian, M. and Jennrich, I. R. (1993) Conjugate gradient acceleration of the EM algorithm, *Journal of the American Statistical Association*, Vol. 88, no.421, pp.221-228.

Jaynes, E. T. (1982) On the Rationale of maximum-entropy methods, *Proceedings of the IEEE*, Vol. 70, no.9, pp.939-952.

Jennrich, R. I. and Sampson, P. F. (1976) Newton-Raphson and related algorithms for maximum likelihood variance component estimation, *Technometrics*, Vol. 18, no.1, pp.1-17.

John, E.S. and Rodney, W.J., (1980) An axiomatic derivation of the principle of maximum entropy and the principle of minimum cross-entropy. *IEEE Transactions on Information Theory*, vol. IT-26 (1), 26-36.

Johnson, R.A. and Wichern, D.W. (1996) Applied multivariate statistical analysis. Prendice Hall of India Private Limited, New Delhi.

Jowitt, P. M. (1979) The Extreme Value Type-1 distribution and the principle of maximum entropy, *Journal of Hydrology*, Vol. 42, pp.23-38.

Kachroo, R. K. (1992 a) River flow forecasting. Part 1: A discussion of the principles, *Journal of Hydrology*, Vol.133, pp.1-15.

Kachroo, R. K. (1992 b) River flow forecasting. Part 2: Algebraic development of the linear techniques, *Journal of Hydrology*, Vol.133, pp.17-40.

Khalil, M., Panu and Lenox, W.C. (2001) Groups and neural networks based streamflow procedures, *Journal of Hydrology*, 241(2001), pp. 153-176.

Kilmartin, R. F. and Peterson, J. R. (1972) Rainfall-runoff regression with logarithmic transforms and zeros in the data, *Water Resources Research,* Vol.83, no.4, pp.1096-1098.

Klemes, V. (1977) Value of information in reservoir optimization, *Water Resources Research, Vol.* 13, no.5, pp. 837-845.

Knotters, M. and Van Walans, P.E.V. (1997) Estimating fluctuation models with a stochastic component, *Journal of Hydrology* 197, pp.25-46.

Kothari, R. and Agyepong, K. (1996) On lateral connections in feed-forward neural networks, *IEEE Proceedings of the International Conference on Neural Networks*, Vol.1, pp.13-18.

Krstanovic, P. F. and Singh, V.P. (1992 a) Evaluation of rainfall network using entropy: II. Theoretical development, *Water Resources Management*, Vol.6, pp. 279-293.

Krstanovic, P. F. and Singh, V.P. (1992 b) Evaluation of rainfall network using entropy: II. Applications, *Water Resources Management*, Vol. 6, pp. 295-314.

Krstanovic, P.F. and Singh, V.P., (1991) A Univariate model for long-term streamflow forecasting, *Stochastic Hydrology and Hydraulics*, Vol. 5, pp.173-188.

Krstanowski, W. J. and Marriot, F. H. C. (1994) Multivariate analysis, Part I Distribution ordination and Inference. Edward Arnold. Great Britain.

Kuczera, G. (1987) On the maximum likelihood estimation for the multi-site lag-one streamflow Model: Complete and incomplete data cases, *Water Resources Research* Vol.23, no.4, pp.641-645.

Kuligowski, R.J., Barros, A.P. (1998) Using artificial neural networks to estimate missing rainfall, *Journal of the American Water Resources Association*, Vol.34, pp1437-1447.

Laird, N. M. and Ware, J. H. (1982) Random effects models for longitudinal data, *Biometrics*, Vol.38, pp.963-974.

Lawrance, S., Tsoi, C. A. and Giles, L. (1996) Local minima and generalization, *IEEE Proceedings of the International Conference on Neural Networks*, Vol.1, pp.371-376.

Little, R. J. A. and Rubin, D. B. (1987) Statistical analysis with missing data, New York: John Wiley.

Liu, C. and Rubin, B. D. (1994) The ECME algorithm: A simple extension of the EM and ECM with faster monotone convergence, *Biometrika,* Vol.81, no.4, pp. 633-648.

Louis, J. A. (1982) finding the observed information matrix when using the EM algorithm, *Journal of the Royal Statistical Society, series B*, Vol.44, pp.226-233.

Makhuva, T., Pegram, G., Sparks R. and Zucchini, W., (1997a) Patching rainfall data using regression methods. 1. Best subset selection, EM and pseudo-EM methods: theory, *Journal of Hydrology* 198, pp.289-307.

Makhuva, T., Pegram, G., Sparks R. and Zucchini, W., (1997b) Patching rainfall data using regression methods. 2. Comparison of accuracy, bias and efficiency, *Journal of Hydrology,* 198, pp.308-318.

Mason, R. L., Gunst, R. F. and Hess, J. L. (1989) Statistical and analysis of experiments with applications to engineering and science, John Wiley & Sons Inc, USA.

Maureen, C. (1992) Understanding neural networks: Computer explorations. Vol. 1. Cambridge, Mass3 MIT Press.

McCuen, R. H., Leahy, R. B. and Johnson, P. A. (1990) Problems with logarithmic transformations in regression, *Journal of Hydraulic Engineering*, Vol.116, no.3, pp.414-428.

Medeiros, Y. D. P., Fiuza, J. M. S., Figueira, C. C. and Sema, C. S. (2002) Information in Salitre River Basin-Bahia, Brasil. In groundwater Hydrology, Sherif (eds) Sweets & Zeitlinger, Lisse, pp.21-35.

Meilijson, I. (1989) A fast improvement to the EM algorithm on its own terms, *Journal of Royal Statistical Society, Series B*, Vol.51, pp.127-138.

Meng, X. L. (1994) On the rate of convergence of the ECM algorithm, *The Annals of Statistics*, Vol.22, no.1, pp.326-339.

Meng, X. L. and Rubin, D. B. (1993) Maximum likelihood estimation via the ECM algorithm" A general framework, *Biometrika*, Vol.80, no.2, pp.267-278.

Midgley, D. C. Middleton, B.J. and Pitman, W.V (1994) Surface water resources of South Africa, 1990, WRC Report no. 298/3.1/94, First Edition.

Minns, A. W. and Hall, M. J. (1996) Artificial neural network as rainfall-runoff models, *Journal of Hydrological Sciences*, Vol.41, no.3, pp.399-417.

Mkhandi, S., Kachroo, R. and Gunasekara, T.A.G. (1996), Flood frequency analysis of Southern Africa: II Identification of regional distributions, *Hydrological Sciences Journal*, Vol.45, no.3, pp.449-463.

Mogheir, Y. and Singh V.P. (2002) Specification of information needs for groundwater resources management planning in developing countries: Gaza strip case study. In: Sherif Sweets and Zeitlinger (eds) *Groundwater Hydrology*, pp. 3-20.

Moran, M. A. (1974) On estimators obtained from sample augmented by multiple regression, *Water Resources Research*, Vol.10, no1, pp.81-85.

Murota, A. (1972) Effects of inadequacy of hydrologic data on reliability of water resources design, *Proceedings of the Second International Hydrological Symposium*, Fort Collins, Colorado, USA, pp. 220-237.

Muttiah, R., Srinivasan, R. and Engel, B.(1998) Development and application of neural network interface for grass GIS. http://www.ncgia.ucsb.edu/conf/SANTA_FE_CD-ROOM/sf_papers/muttiah_ra…/muttiah.htm.

Nasrabati, N. M., Diamat S. and Venkaraman, S.(1991), Non-linear Prediction using a Three-Layer Neural Network, *International Joint Conference on Neural Networks,* Vol.1, pp. I689-I694.

Nelson, M. M. and Illingworth, W.T. (1991) A Practical Guide to Neural Nets. Addison Wesley Company, Inc.

Ng, S.C., Leung, S. H. and Luk, A. (1996) A Generalization backpropagation algorithm for faster convergence. *IEEE Proceedings of the International Conference on Neural Networks*, Vol.1, pp.409-413.

Ozkul, S., Harmancioglu and N. B., Singh, V. P. (2000) Entropy-based assessment of water quality monitoring networks, *Journal of Hydrologic Engineering*, Vol.5, 1, pp.91-100.

Panu, U.S. (1992) Application of some entropic measures in hydrologic data infilling procedures. In: Singh, V.P. and Fiorentino (eds.), *Entropy and Energy Dissipation in Water Resources*, Kluwer Academic Publishers, the Netherlands, pp. 175-192.

Panu, U. S., Khalil, M and Elshorbagy, A., (2000) Sreamflow data infilling techniques based on concepts of groups and neural networks. In: Govindaraju, R. S. and Rao, R. A.(eds) *Artificial Neural Networks in Hydrology*, Kluwer academic publishers, Dordrecht, Boston, London, Vol.36, pp. 235-258.

Patnaik, L.M., Nair H., Abraham V., Ragavendra, G.,, Shishir, K.S., Srinivasan, and Ramchand, K., (1996) Performance evaluation of neural network algorithms for multisensor data fusion in an airborne track while scan radar. *IEEE, Proceedings of the International Conference on Neural Network*, Vol.1, pp. 223-227.

Pawitan, Y. (2001) In all likelihood: Statistical modeling and inference using likelihood, Oxford Science Publications, USA.

Pegram, G. (1985) Analysis and patching of hydrological data. Department of Water Affairs, South Africa, Report no. 4161/02

Pegram, G. (1997) Patching rainfall data using regression methods, 3. Grouping, patching and outliers detection, *Journal of Hydrology*, Vol. 198, pp.319-334.

Phansalkar, V.V. and Sastry, P. S. (1994) Analysis of the backpropagation algorithm with momentum. *IEEE Transactions on Neural Networks*, Vol.5, no.3, pp.506-516.

Press, W. H., Teukolsky, S. A., Vallering, W. T. and Flannery, B. P. (1996) Numerical recipes in Fortran, the Art of the scientific computing second edition, Published by Mans Saikia for Foundation Books.

Raman, H. and Sunilkumar, N. (1995) Multivariate modelling of water resources time-series using artificial neural networks, *Hydrological Sciences Journal*, Vol. 40, no. 2, 145-163.

Reddy, J. M. and Wilamowski (2000) Adaptive Neural Networks in Regulation of River flows, *Artificial Neural Networks in Hydrology*. Kluwer Academic Publishers, pp.153-177.

Rodriguez-Itube, I. and Meija, J. (1974) The design of rainfall network in time and space, *Water Resources Research*, Vol.10, no.4, pp.713 -728.

Sadowsky, G. (1989) Statistical data processing in developing countries. Applications of emerging Technology. CEUS: Emerging Technology, pp.1-26.

Sajikumar, N. and Thandveswara, B. S. (1999) A non-linear rainfall model using artificial neural networks, *Journal of Hydrology*, Vol. 216, pp.32-55.

Schaffer, J.L. (1997) Analysis of Incomplete Multivariate Data. Chapman and Hall, London

Shannon, C. E. and Weaver, W. (1949) The Mathematical theory of communication. University of Illinois Press Urbana, Chicago, London.

Shin, H. S. and Salas, J. D. (2000) Regional drought analysis based on neural networks, *Journal of Hydrologic Engineering,* Vol. 5, no.2, pp.145-155.

Simonovic, J. P. (1995) Synthesizing missing streamflow records on several Manitoba sing multi-non-linear standardized correlation analysis, *Hydrological Sciences Journal*, Vol. 40, no.2, pp.183-203.

Singh, V. P. (1996) The use of entropy in hydrology and water resources. *Hydrological Processes, in press,* pp.1-68

Singh, V. P. and Fiorentino, M. (1992) A historical perspective of entropy applications in Water Resources, Kluwer Academic Publishers, Dodrecht, The Netherlands, pp. 21-61.

Singh,V. P. (1998a) Entropy based modeling in hydrology and water resources. Water resources Program, Department of Civil and Environmental Engineering, Louisiana State University, Baton Rouge, U.S.A.

Singh, V. P. (1998b) Entropy-based parameter estimation in hydrology, *Water Science and Technology Library*, Kluwer Academic Publishers, Dodrecht, The Netherlands.

Singh, V. P. (1998c) Entropy as a decision tool in environmental and water resources, *The Indian Association of Hydrologists*, *Hydrology Journal*, Vol.21, no.4, pp.1-12.

Singh, V.P., and Krstanovic (1987) A Stochastic model for sediment yield using the principle of maximum entropy, *Water Resources Research*, Vol.23, no.5, pp.781-793.

Slack, J.R., Wallis, J.R., Matalas, N.C. (1975) On the value of information to flood frequency analysis, *Water Resources Research*, Vol., no.5, pp.629-647.

Sonuga, J. O., (1972) Principle of maximum entropy in hydrologic frequency analysis, *Journal of Hydrology*, Vol.30, pp.81-94.

Sonuga, J. O., (1976) Entropy process applied to the rainfall-runoff process, *Journal of Hydrology*, Vol.30, pp.81-94.

Soudan, M. (2002) Outlier detection of multivariate extrapolated administrative data in Belgian National accounts. Department of Statistics, National Bank of Belgium, CES/AC.68/2002/10.

Stephenson, D. (2002) Modular kinematic Model for runoff simulation. In: Singh, V. P., and Frevert, D. K.(eds.) *Mathematical models of small watershed hydrology and applications*, *Water Resources Publications*, pp. 183-222

  Stephenson, D. (2003) The effect of risk on the cost of water supply, Urban and rural systems for sustainable development, *Proceedings IHAR Conference of the XXX IAHR Congress (Theme B),* Tessaloniki, Greece, 24-29 August, pp. 183-190.

Tateishi, M., Tamura, S. (1997) Capabilities of a Four-layered feedforward neural network: Four layers versus three, *IEEE Transactions on Neural Networks*, Vol.8, no.2, pp.251-255.

Thirumalaiah, K., and Deo, M.C. (2000) Hydrological forecasting using neural networks, *Journal of Hydrologic Engineering,* Vol.5, no.2, pp.180-189.

Tokar, S. A. and Markus, M. (2000) Precipitation-runoff using artificial neural networks and conceptual models, *Journal of Hydrologic Engineering,* Vol.5, no.2, pp.156-161.

Vinces, G. I., Rodriguez-Itube, I. and Schaake, J. C. (1975) A Bayesian framework for the use of regional information in hydrology, *Water Resources Research*, Vol.11, no.3, pp.405-414.

Vogel, R.M. and Stedinger, J.R. (1985) Minimum variance streaflow reconstruction record augmentation procedure, *Water Resources Research*, Vol. 21, no.5, pp. 715-723.

Wanateba, E. (1997) Adaptive determination of the amount of forgetting in the learning algorithm with forgetting, *Proceedings of the International Conference on Neural Information Proceeding and Intelligent Information Systems*, Vol.1, 217-220

Wei, Z., Yinglin and Y., Qing J. (1991) Approximation property of multi-layer neural networks (MLNN) and its Applications in Non-linear Simulation. *International Joint Conference on Neural Networks,* pp.I-171-I-176.

Weisberg, S. (2001) Yeo-Johnson power transformations. Department of Applied Statistics, University of Minnesota, St. Paul, MN 55108-6042, Supported by National Science Foundation Grant DUE 97-52887.

WoodBury, A. D. and Ulrych, T. J. (1993) Minimum relative entropy: Forward probabilistic modeling, *Water Resources Research*, Vol.29, no.8, pp.2847-2860.

Wostern, J. H. M., Pachespky and Rawls, W. J. (2001) Pedotransfer functions: bridging the gap between available basic soil data and missing soil hydraulic characteristics, *Journal of hydrology* 251, pp.123-150.

Wu, C. F. J. (1983) On the convergence properties of the EM algorithm, *The Annals of Statistics*, Vol. 11, pp.95-103

Xu, L. (1997) Comparative analysis on convergence rates of the EM algorithm and its two modifications for Gaussian mixtures, *Neural Proceeding Letters 6*, pp. 69-76.

Yang, Y. and Burn, H. (1994) Entropy approach to data collection network design, *Journal of Hydrology*, Vol. 94, 307-324.

Yevjevich, V. (1972) Probability and statistics in hydrology, *Water Resources Publications*, Fort Collins, Colorado, U.S.A.

Zealand, C. M, Burn, D. H., Simonovic, S. P. (1999) Short-term streamflow forecasting using artificial neural networks, *Journal of Hydrology*, Vol. 214, pp.32-48

Zucchini, W., Hiemstra, L.A. and Sparks, R.S., (1984) I. Augmenting hydrological records, II. Estimating the Missing values in rainfall records. Report to the Water Research Commission by the Department of Civil Engineering, University of Stellenbosch. WRC Report no. 91/3/84.