References

[P()] ().

- [Abebe and Price(2003)] Abebe, A. J., and R. K. Price (2003), Managing uncertainty in hydrological models using complementary models, *Hydrological sciences journal*, 48(5), 679–692.
- [Amorocho and Espildora (1973)] Amorocho, J., and B. Espildora (1973), Entropy in the assessment of uncertainty in hydrologic systems and models, Water Resources Research, 9(6), 1511–1522.
- [Asefa et al.(2006) Asefa, Kemblowski, McKee, and Khalil] Asefa, T., M. Kemblowski, M. McKee, and A. Khalil (2006), Multi-time scale stream flow predictions: The support vector machines approach, Journal of Hydrology, 318(1), 7–16.
- [Behzad et al.(2009)Behzad, Asghari, Eazi, and Palhang] Behzad, M., K. Asghari, M. Eazi, and M. Palhang (2009), Generalization performance of support vector machines and neural networks in runoff modeling, Expert Systems with applications, 36(4), 7624–7629.
- [Beven(2001)] Beven, K. J. (2001), How far can we go in distributed hydrological modelling, Hydrology and Earth System Sciences, 5(1), 1–12.
- [Blöschl and Sivapalan (1995)] Blöschl, G., and M. Sivapalan (1995), Scale issues in hydrological modelling: a review, Hydrological processes, 9(3-4), 251-290.
- [Boyle(2001)] Boyle, D. P. (2001), Multicriteria calibration of hydrologic models.
- [Bryant and Richard (2003)] Bryant, R., and O. H. D. Richard (2003), Computer systems: a programmer's perspective, Prentice Hall.
- [Budyko(1961)] Budyko, M. (1961), The heat balance of the earth's surface, Soviet Geography, 2(4), 3–13.
- [Cerra and Datcu(2013)] Cerra, D., and M. Datcu (2013), Expanding the algorithmic information theory frame for applications to earth observation, Entropy, 15(1), 407–415.
- [Chang and Lin(2011)] Chang, C. C., and C. J. Lin (2011), Libsvm: a library for support vector machines, ACM Transactions on Intelligent Systems and Technology (TIST), $\mathcal{Z}(3)$, 27.
- [Chapman(1986)] Chapman, T. G. (1986), Entropy as a measure of hydrologic data uncertainty and model performance, Journal of Hydrology, 85(1), 111–126.

- [Choudhury (1999)] Choudhury, B. J. (1999), Evaluation of an empirical equation for annual evaporation using field observations and results from a biophysical model, Journal of Hydrology, 216(1), 99–110.
- [Cortes and Vapnik(1995)] Cortes, C., and V. Vapnik (1995), Support-vector networks, Machine learning, 20(3), 273–297.
- [Cover and Thomas (2012)] Cover, T. M., and J. A. Thomas (2012), Elements of information theory, John Wiley & Sons.
- [Dibike et al.(2001)Dibike, Velickov, Solomatine, and et al] Dibike, Y. B., S. Velickov, D. Solomatine, and et al (2001), Model induction with support vector machines: introduction and applications, Journal of Computing in Civil Engineering, 15(3), 208–216.
- [Duan et al.(2006) Duan, Schaake, Andreassian, and et al] Duan, Q., J. Schaake, V. Andreassian, and et al (2006), Model parameter estimation experiment (mopex): An overview of science strategy. and major results from the second and third workshops, Journal of Hydrology, 320(1), 3–17.
- [Freeze and Harlan(1969)] Freeze, R. A., and R. L. Harlan (1969), Blueprint for a physically-based digitally-simulated hydrologic response model, Journal of Hydrology, 9(3), 237–258.
- [Fu(1981)] Fu, B. (1981), Lansurface evaporation calculation, Meterology Science (China), 5(1), 23–31.
- [Gerrits et al.(2009) Gerrits, Savenije, Veling, and et al.] Gerrits, A. M. J., H. H. G. Savenije, E. J. M. Veling, and et al. (2009), Analytical derivation of the budyko curve based on rainfall characteristics and a simple evaporation model, Water Resources Research, 45(4).
- [Gong(2012)] Gong, W. (2012), Watershed model uncertainty analysis based on information entropy and mutual information, PhD thesis of Department of Hydraulic Engineering Tsinghua University, Beijing, China.
- [Gong et al.(2013) Gong, Gupta, Yang, and et al] Gong, W., H. V. Gupta, D. Yang, and et al (2013), Estimating epistemic and aleatory uncertainties during hydrologic modeling: An information theoretic approach, Water Resources Research, 49(4), 2253–2273.
- [Gong et al.(2014) Gong, Yang, Gupta, and Nearing] Gong, W., D. Yang, H. V. Gupta, and G. Nearing (2014), Estimating information entropy for hydrological data: One-dimensional case, Water Resources Research, 50(6), 5003–5018.
- [Granados et al.(2014) Granados, Koroutchev, and Rodriguez] Granados, A., K. Koroutchev, and F. D. B. Rodriguez (2014), Discovering dataset nature through algorithmic clustering based on string compression.

- [Grunwald and Vitányi (2004)] Grunwald, P., and P. Vitányi (2004), Shannon information. and kolmogorov complexity, arXiv preprint cs/0410002.
- [Hofstadter (2000)] Hofstadter, D. R. (2000), Gödel, Escher, Bach, An Eternal Golden Braid, 313 pp., Penguin.
- [Hyvärinen et al.(2004) Hyvärinen, Karhunen, and Oja] Hyvärinen, A., J. Karhunen, and E. Oja (2004), Independent component analysis, vol. 46, John Wiley & Sons.
- [Jobson (1982)] Jobson, H. E. (1982), Evaporation into the atmosphere: Theory, history, and applications, Eos Transactions American Geophysical Union, 63(51), 1223–1224.
- [Kraskov et al.(2004)Kraskov, Stögbauer, and Grassberger] Kraskov, A., H. Stögbauer, and P. Grassberger (2004), Estimating mutual information, Physical review E, 69(6), 066,138.
- [Li and Paul(2009)] Li, M., and V. Paul (2009), An introduction to Kolmogorov complexity and its applications, Springer Science & Business Media.
- [Lin et al.(2006)Lin, Cheng, and Chau] Lin, J. Y., C. T. Cheng, and K. W. Chau (2006), Using support vector machines for long-term discharge prediction, Hydrological Sciences Journal, 51(4), 599–612.
- [Madiman and Kontoyiannis (2010)] Madiman, M., and I. Kontoyiannis (2010), The entropies of the sum and the difference of two iid random variables are not too different, in *Information Theory Proceedings (ISIT)*, 2010 IEEE International Symposium on, pp. 1369–1372, IEEE.
- [Moore(1985)] Moore, R. J. (1985), The probability-distributed principle and runoff production at point and basin scales, Hydrological Sciences Journal, 30(2), 273–297.
- [Nash and Sutcliffe(1970)] Nash, J. E., and J. V. Sutcliffe (1970), River flow forecasting through conceptual models part in discussion of principles, Journal of hydrology, 10(3), 282–290.
- [Pettitt(1979)] Pettitt, A. N. (1979), A non-parametric approach to the change-point problem, Applied statistics, pp. 126–135.
- [Pokhrel and Gupta(2010)] Pokhrel, P., and H. V. Gupta (2010), On the use of spatial regularization strategies to improve calibration of distributed watershed models, Water resources research, 46(1).
- [Sankarasubramanian and Vogel(2002)] Sankarasubramanian, A., and R. M. Vogel (2002), Annual hydroclimatology of the united states, Water Resources Research, 38(6), 19–1.

- [Sankarasubramanian and Vogel(2003)] Sankarasubramanian, A., and R. M. Vogel (2003), Hydroclimatology of the continental united states, Geophysical Research Letters, 30(7).
- [Shannon(1948)] Shannon, C. E. (1948), A mathematical theory of communication, ACM SIGMOBILE Mobile Computing and Communications Review, 5(1), 3–55.
- [Shi and Eberhart (1998)] Shi, Y., and R. Eberhart (1998), A modified particle swarm optimizer, in Evolutionary Computation Proceedings, 1998, IEEE World Congress on Computational Intelligence, The 1998 IEEE International Conference on, pp. 69–73, IEEE.
- [Singh(1997)] Singh, V. P. (1997), The use of entropy in hydrology and water resources, *Hydrological processes*, 11(6), 587–626.
- [Singh(2000)] Singh, V. P. (2000), The entropy theory as a tool for modelling and decision-making in environmental and water resources, WATER SA-PRETORIA-, 26(1), 1–12.
- [Singh(2013)] Singh, V. P. (2013), Entropy theory and its application in environmental and water engineering, John Wiley & Sons.
- [Tekleab et al.(2011) Tekleab, Uhlenbrook, Mohamed, and et al] Tekleab, S., S. Uhlenbrook, Y. Mohamed, and et al (2011), Water balance modeling of upper blue nile catchments using a top-down approach, Hydrology and Earth System Sciences, 15(7), 2179–2193.
- [Thomas (1981)] Thomas, H. A. (1981), Improved methods for national water assessment, WR15249270/A].
- [Wang and Alimohammadi (2012)] Wang, D., and N. Alimohammadi (2012), Responses of annual runoff, evaporation, and storage change to climate variability at the watershed scale, Water Resources Research, 48(5).
- [Wang and Tang(2014)] Wang, D., and Y. A. Tang (2014), A one-parameter budyko model for water balance captures emergent behavior in darwinian hydrologic models, Geophysical Research Letters, 41(13), 4569–4577.
- [Weijs and Giesen(2011)] Weijs, S. V., and N. V. D. Giesen (2011), Accounting for observational uncertainty in forecast verification: An information-theoretical view on forecasts, observations, and truth, Monthly Weather Review, 139(7), 2156–2162.
- [Weijs et al.(2010a) Weijs, Schoups, and Giesen] Weijs, S. V., G. Schoups, and N. V. D. Giesen (2010a), Why hydrological predictions should be evaluated using information theory, Hydrology and Earth System Sciences, 14 (12), 2545–2558.

- [Weijs et al.(2010b) Weijs, Schoups, and Giesen] Weijs, S. V., G. Schoups, and N. V. D. Giesen (2010b), Kullback-leibler divergence as a forecast skill score with classic reliability-resolution-uncertainty decomposition, Monthly Weather Review, 138(9), 3387–3399.
- [Weijs et al. (2013a) Weijs, Giesen, and Parlange] Weijs, S. V., N. V. D. Giesen, and M. B. Parlange (2013a), Data compression to define information content of hydrological time series, Hydrology. and Earth System Sciences, 17(8), 3171–3187.
- [Weijs et al.(2013b) Weijs, Giesen, and Parlange] Weijs, S. V., N. V. D. Giesen, and M. B. Parlange (2013b), Hydrozip: how hydrological knowledge can be used to improve compression of hydrological data, Entropy, 15(4), 1289–1310.
- [Xiong and Guo(1999)] Xiong, L., and S. Guo (1999), A two-parameter monthly water balance model and its application, Journal of Hydrology, 216(1), 111–123.
- [Xu et al.(2014) Xu, Yang, Yang, and et al] Xu, X., D. Yang, H. Yang, and et al (2014), Attribution analysis based on the budyko hypothesis for detecting the dominant cause of runoff decline in haihe basin, Journal of Hydrology, 510, 530–540.
- [Yang et al.(2007) Yang, Sun, Liu, and et al] Yang, D., F. Sun, Z. Liu, and et al (2007), Analyzing spatial and temporal variability of annual water-energy balance in nonhumid regions of china using the budyko hypothesis, Water Resources Research, 43(4).
- [Yang et al.(2008) Yang, Yang, Lei, and et al] Yang, H., D. Yang, Z. Lei, and et al (2008), New analytical derivation of the mean annual water-energy balance equation, Water Resources Research, 44(3).
- [Zhang and Dawes (2001)] Zhang, L., and W. R. Dawes (2001), Response of mean annual evapotranspiration to vegetation changes at catchment scale, Water resources research, 37(3), 701–708.
- [Zhang et al.(2008)Zhang, N., K., and et al] Zhang, L., P. N., H. K., and et al (2008), Water balance modeling over variable time scales based on the budyko framework–model development and testing, Journal of Hydrology, 360(1), 117–131.