CEE7430, Reading List by Subject.

Some philosophy and humor

Feynman et al. (1985) chapters on Cargo Cult Science, Judging Books by their covers and he fixes radios by thinking; Milly et al. (2008); Loucks et al. (2005) chapter 2.

Introduction. What is Stochastic Hydrology? Synthetic streamflow generation, Reservoir Reliability

Bras and Rodriguez-Iturbe (1985) chapter 1, Loucks et al. (2005) chapter 7, Pegram (1989), Linsley et al (1982) chapter 14,

Application

Barnett and Pierce (2008), National Research Council Committee on the Scientific Bases of Colorado River Basin Water Management (2007), Tarboton (1994) Tarboton (1995).

Random variables, probability distributions and moments.

Salas et al. (1980), Helsel and Hirsch (2002).

Multiple random variables and joint distributions. Conditional and joint probability.

Bras and Rodriguez-Iturbe (1985)

Nonparametric probability distribution estimation.

Silverman (1986), Scott (1992)

Models to represent the relationship between variables. Linear regression, kernel regression, local regression, splines, neural networks.

Hastie et al. (2001)

Time series models of hydrologic processes. Univariate and multivariate.

Bras and Rodriguez-Iturbe (1985), Salas et al. (1980)

Multivariate time series, Disaggregation, Principal Components, Singular Spectrum Analysis.

Loucks et al. (1981) chapter 6, Bras and Rodriguez-Iturbe (1985) chapter 3, Helsel and Hirsch (1992), Tong (1990), Elsner and Tsonis (1996)

Long term persistence: Hurst phenomenon, fractals.

Bras and Rodriguez-Iturbe (1985) chapter 5, Pegram et al. (1980), Feder (1988) chapters 8 and 9. Klemes (1974)

Nonparametric methods applied to hydrologic time series, streamflow, precipitation.

Lall and Sharma (1996), Sharma et al. (1997), Tarboton et al. (1998), Lall et al. (1996), Rajagopalan et al. (1996)

Frequency Domain Analysis. Power Spectrum, Multi-taper spectra, Spectra for unevenenly spaced data.

Percival and Walden (1993), Bras and Rodriguez-Iturbe (1985) chapter 4, Kirchner et al. (2001; 2000), Neal and Kirchner (2000), Scargle (1982), Jenkins and Watts (1968), Chatfield (1975)

Spatial Processes and Random Fields. Applications to Rainfall. Generation of random fields by sampling from the spectrum and the turning bands method. Kriging.

Vanmarcke (1983), Bras and Rodriguez-Iturbe (1985) chapter 6, 7, Cressie (1993).

Optimal estimation of dynamic systems, Kalman Filter, Ensemble Kalman Filter.

Bras and Rodriguez-Iturbe (1985), chapter 8; Brown (1983), Gelb (1984)

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Feynman, R. P., R. Leighton and E. Hutchings, (1985), "Surely You're Joking, Mr. Feynman!": Adventures of a Curious Character, W.W. Norton, 350 p, http://www.gorgorat.com/.

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