

Citations to the CAPTAIN Toolbox

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Research Note 2019—2

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Introduction

The CAPTAIN Toolbox is a collection of MATLAB functions for system identification, time series analysis, forecasting and control (Taylor et al. 2007). The current developers are Peter Young, Wlodek Tych and James Taylor, Lancaster University, UK. An additional substantial co-author is Diego Pedregal, Castilla-La Mancha University, Spain. Paul McKenna and Renata Romanowicz contributed to some functions whilst at Lancaster University.

This document lists articles that cite CAPTAIN via the references in Table 1. Articles co-authored by Taylor, Tych, Young and/or Pedregal are excluded (of course, they have used and cited their own toolbox many times). Table 2 lists citing articles that do not include any authors from Lancaster University or KU Leuven (where several academics are long time CAPTAIN users). Table 3 lists articles that include at least one author from KU Leuven. Table 4 lists articles with Lancaster co-authors (still excluding Taylor, Tych, Young and Pedregal).

CAPTAIN was explicitly used to generate results in most of the citing articles. In these cases, some of the relevant algorithms are indicated in the final column. Here, ‘VFLUX’ (Lautz 2012) is a non-Lancaster software package that uses the CAPTAIN DHR function; ‘CONTSID’ (Padilla et al. 2015) is a rival toolbox, sometimes used alongside CAPTAIN; ‘Cites TDC’ refers to a citation only to the book on True Digital Control (Taylor et al. 2013) and not directly for CAPTAIN; and ‘No citation’ implies Google Scholar or Scopus has its wired crossed. In Table 2, ‘Essam’, ‘Jafa’ and ‘Renata’ refer to former Lancaster researchers who continue to use the Toolbox. Finally, in some cases, the Toolbox was not used by the authors and is cited only as e.g. complementary research (‘Citation only’).

Table 1: Toolbox references together with number of Google Scholar citations at 20–09–2019.

Reference	Citations	Type
Taylor et al. (2007)	242	Journal article
Young et al. (2010)	60	Empty placeholder on lancs.eprints.ac.uk
Taylor et al. (2013)	42	Book on True Digital Control (TDC)
Pedregal et al. (2007)	30	Handbook available from the authors
Young et al. (2009)	23	Conference Proceedings
Young & Taylor (2012)	13	Conference Proceedings
Young et al. (2004)	11	Appears only as a citation on Google Scholar

Citations to the CAPTAIN Toolbox

Table 2: Worldwide authors citing CAPTAIN.

Reference	Address	Application	Functions
Bhujwalla (2019)	Lorraine France	Identification	DHR
Briggs et al. (2019)	US Geological Survey, Berkeley	Beaver ponds	VFLUX
Mendoza et al. (2019)	Cuenca Ecuador	Rainfall	DHR, KF/FIS
Ratmaya et al. (2019)	CEDEK France	River phosphorus	Citation only
Šreng et al. (2019)	Osijek Croatia	Bacteria in aquifer	RIV
Tötterman (2019)	Abo Finland	Robust control	Cites TDC only?
Kharaji et al. (2019)	Zahedan Iran (Jafar)	Distillation control	RIV, cites TDC
Armenise et al. (2018)	Pisa Italy	Identification software	Citation only
Briggs et al. (2018)	US Geological Survey	Groundwater	VFLUX
Coluccio (2018)	Canterbury New Zealand	Groundwater/surface	VFLUX
Duan et al. (2018)	CAS China, California USA	River water quality	DHR
García (2018)	Ciudad Real, Pedregal student	SSPACE toolbox	Citation only
Gavin et al. (2018)	Washington, California USA	Low colostrum in cattle	CCF
Grandemange (2018)	Lorraine France	Traffic (In French)	DHR
Juarez et al. (2018)	Zacatecas Mexico	Hydraulic conductivity	VFLUX
Moghadam et al. (2018)	Zahedan Iran	Process quality control	DARX
Pina et al. (2018)	La Habana Cuba	Pharmacy (In Spanish)	CONTSID, citation only?
Rocabado (2018)	Santiago de Chile	Hydrology (In Spanish)	RIV, SDP, citation only?
Sayed et al. (2018)	Cairo Egypt (Essam)	Robotics	SDP, RIV
Sobolic et al. (2018)	Michigan USA, Jordon	Control	Citation only
Yang et al. (2018)	Ministry Ag. China, San Diego	Air pollution	DHR
Tursinbaeva & Adil. (2018)	WEBSITE DOWN	Temperature control	Cites TDC
Janot (2018)	Toulouse France	Robotics	RIV, PIP, cites TDC

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Reference	Address	Application	Functions
Wolski (2018) Haredasht et al. (2018)	Liverpool UK California (ex-Leuven)	Electron storage rings Cattle	Needs login, cites TDC DHR
Alegria & Bottura (2017) Bhujwalla et al. (2017) Bidar et al. (2017) Brunot et al. (2017) Brunot (2017) Clay (2017) Goudjil (2017)	Campinas Brazil Lorraine France, Nancy, Lux. Zahedan Iran (Jafar) Toulouse France Toulouse France North Carolina USA Normandy France	Hydraulics, INCA Network traffic Debutanizer column Robotics Robotics Groundwater Robotics (in French)	ARX, SDP ARSPEC, DHR SDARX IRWSM IRWSM VFLUX SDARX, CONSID
Grandemange et al. (2017a) Grandemange et al. (2017b) Hamed et al. (2017) Kikuchi & Ferré (2017) Lu, Yao & Shu (2017) Lu, Chen & Su (2017) Macaia (2017) Meresa et al. (2017) Pan et al. (2017) Roussel (2017) Zhou et al. (2017) Ogun et al. (2017)	Lorraine France, Nancy, Lux. Lorraine France, Nancy, Lux. Cairo, Egypt (Essam) Arizona USA Nanjing Hydro Bureau China Nanjing Hydro Bureau China Lisbon Portugal Poland (Renata) Nanjing China, SK Canada Strasbourg France Richland USA, Nanjing China Coventry, Akwa Nigeria	Probably same article? Bitumen tank Groundwater Surface/groundwater Surface/groundwater (In Portuguese) River catchments Water balance Robotics (In French) Hydrologic exchange pH control	ARSPEC, DHR ARSPEC, DHR RIV VFLUX VFLUX DHR No citation? DHR DLR Unclear if used DHR Cites TDC only?
Alegria & Bottura (2016) Alegria et al. (2016) De Pace & Weber (2016) Dupas et al. (2016) Halliday et al. (2016)	Campinas Brazil Campinas Brazil Claremont USA Leipzig Magdeburg Germany Reading, Oxon, Env. Agency	Hydraulics, INCA (In Spanish) Econometrics River nitrates River algal growth	Citation only ARX, FIS FIS DHR, IRW DHR

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Reference	Address	Application	Functions
Marsili-Libelli (2016)	Florence Italy	Environmental processes	No Access
Nasir (2016)	Melbourne Australia	Water control	SDP, CONSID
Reeves & Hatch (2016)	Massachusetts USA	Surface/groundwater	VFLUX
Ungvári et al. (2016)	Debrecen Hungary, Canada	Cells? Lasers?	No citation?
Xu et al. (2016)	Zhejiang China	Carbon flux	DLR
Recido (2016)	Manila Philippines	Social protection	No citation? (TDC)
Gharehbagli & Sadeghi (2016)	Zahedan Iran (Jafar)	Catalyst deactivation	Cites TDC for SDP
Khalilipour et al. (2016)	Zahedan Iran (Jafar)	Oil distillation	Cites TDC for NMSS etc.
Alegria et al. (2015b)	Campinas Brazil	SDP research	FIS, SDP
Alegria et al. (2015a)	Campinas Brazil	INCA toolbox	FIS, SDP, comparison
Nasir & Weyer (2015)	Melbourne Australia	River modelling	SDP
Castillo-Manzano et al. (2015)	Seville Spain	Rail/air transport	FIS, DLR
Garnier (2015)	CRAN France	CONSYD toolbox	CONTSID, citation only
Ha & Welsh (2015)	Newcastle Australia	Identification, YIC	CONTSID, citation only
Hao et al. (2015)	China, Greece, USA	Water balance	DHR
Karamuz et al. (2015)	Poland (Renata), Twente	River flow	RIV
Minaudo et al. (2015)	Tours France, Paris	River chemistry	DHR
Otieno & Ndiritu (2015)	Pretoria RSA	Water quality	RIV
Padilla et al. (2015)	CRAN France	CONTSID toolbox	CONTSID, citation only
Pagendam & Percival (2015)	Queensland Aust., Washington	River/tidal flow	DHR
Park et al. (2015)	Hydro. Survey Center Korea	Evapotranspiration	DLR
Rau et al. (2015)	NSW Australia, Birmingham	River sediment	DHR
Rebai et al. (2015)	El Harrach Algeria, Troyes	RIM toolbox	Citation only
Romanowicz & Osuch (2015)	Poland (Renata)	Flood forecasting	RIV
Roulin & Vannitsem (2015)	Brussels Belgium	Hydrological forecasting	RIV
Roussel et al. (2015)	Toulouse France	Sea levels	DHR

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Reference	Address	Application	Functions
Su et al. (2015)	Nanjing China	Hyporheic exchange	DHR
Dozein et al. (2015)	Tehran Iran	Voltage stability	Not clear why cites TDC
Ansari et al. (2015)	Tehran Iran	Voltage stability	Not clear why cites TDC
Tao et al. (2015)	Ningbo China	Process control	Cites TDC only
Unknown (2015)	?	(In Chinese?)	DHR
Jamali et al. (2015)	Zahedan Iran (Jafar)	Engine control	RIV, TDC
Bolea et al. (2014)	Barcelona Spain	Irrigation control	Citation only
Ha & Welsh (2014)	NSW Australia	Identification, SRIVC	Citation only
Hamed et al. (2014)	Helwan Egypt (Essam)	Bitumen Tank	RIV
Ma et al. (2014)	Beijing China, Sweden	Wastewater	Citation only
Ninness (2014)	Newcastle Australia	System Identification	No access
Quichimbo & Vázquez (2014)	Cuenca Ecuador	(In Spanish?)	RIV
Romanowicz & Kar. (2014)	Poland (Renata)	Climate? (In Polish)	RIV
Shaban & Nada (2014)	Helwan Egypt (Essam)	FPGA board	SDP
Wu et al. (2014)	Beijing	Forest canopy	DHR? No access
Zheng & Chen (2014)	Singapore	Stock market, KF/ML	Citation only?
Laycock et al. (2014)	Auckland New Zealand	Corrosion	No citation (TDC)
Aliane et al. (2013)	Madrid Spain	Using Excel	Citation only
Zheng & Chen (2013)	Singapore	Stock market	No access (contents only)
Gariglio et al. (2013)	US Forest Service, Rocky M.	Hyporheic exchange	VFLUX
Gordon (2013)	Syracuse USA?	Groundwater/surface	VFLUX, ARX, etc.
Haddad et al. (2013)	Oran Algeria	Sea level	UCM, DHR
Halliday et al. (2013)	Reading, CEH UK, Switz.	River nitrates	DHR
Hatzopoulos & Hab. (2013)	Samos Greece, City	Worldwide mortality	DLR
Hitzemann (2013)	Coventry UK	Control	SDP, FIS, TDC
Ionescu (2013)	CERTES France	(In French)	Citation only?

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Reference	Address	Application	Functions
Luce et al. (2013) Maheswaran & Khosa (2013) Markovsky (2013) Maruta & Sugie (2013) de Pace (2013) Quichimbo et al. (2013) Zajíc (2013)	Rocky Mountain USA Delhi India Brussels Belgium Kyoto Japan Claremont USA Cuenca Ecuador Coventry UK	Streambeds Groundwater Identification software Control Gross Domestic Product (In Spanish?) Heating control	DHR DAR No citation? RIVC KF/FIS RIV RIVC, IRWSM, TDC
Hjalmarsson & Sjöberg (2012) Kiczko & Ermolieva (2012) Lautz (2012) Lautz & Ribaudo (2012) Peralta (2012) Romanowicz (2012) Vaughan & McIntyre (2012) Vogt et al. (2012) von Asmuth et al. (2012) Wagener & McIntyre (2012) Wheater et al. (2012) Xiaolian (2012) Zajic et al. (2012b) Zajic et al. (2012a) Zheng & Chen (2012) Unknown (2012)	Stockholm Sweden Warsaw Poland, Austria NY USA NY USA Spain Poland (Renata) Env. Agency, Imperial Switzerland, Germany Delft, Utretch Pennsylvania USA, Imperial Imperial UK Xiamen China Coventry UK Coventry UK Singapore ?	Ident. software Reservoir flow Hydrogeology Hydrogeology (In Spanish) Water quality Flood forecasting Groundwater Hydrogeology Catchment classification Flood risk Stock market Industry air unit Industrial temperature Stock market (In Chinese?)	Citation only RIV VFLUX, DHR VFLUX, DHR Citation only? RIV RIV DHR Citation only RIV RIV Citation only? RIV RIV Citation only? ?
Ciavatta & Pastres (2011) Horn & Schulz (2011) Horn (2011)	Plymouth, Venice Italy Munich Germany Munich	Biogeochemical Biogeosciences Biogeosciences	DHR DLR, SDP DLR, SDP

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Reference	Address	Application	Functions
Kiczko & Napiórkowski (2011) Liu et al. (2011) Meng, Guan & Xie (2011) Meng, Guan & Yan (2011) de Pace (2011) Prieto (2011) Romanowicz & Osuch (2011) Sampson et al. (2011) Suarez (2011) Unknown (2011)	Warszawa Poland Penrith Australia, Beijing Xian China Xian China Claremont USA Madrid Poland (Renata) Seattle USA, Sweden Florida USA ?	Reservoir control Identification CFD modelling Fluid flow Gross domestic product Time series Water management Air quality Neuronal models (In Greek?)	RIV Citation only Cites others use of RIV? RIV DLR DHR, citation only? RIV No citation? DLR, comparison only ?
Bennett et al. (2010) Bo et al. (2010) Gasser & Wiberg (2010) Jiang et al. (2010) Lautz et al. (2010) Maheswaran & Khosa (2010) McIntyre & Marshall (2010) Pace (2010) Quichimbo (2010) Sedano & Corchado (2010) Sedano & Curiel (2010) Victor (2010) Vogt et al. (2010) Yanar & Akyürek (2010) Unknown (2010)	Canberra Australia Beijing, Maryland USA Unknown Beijing, Maryland USA NY USA (VFLUX) Delhi India Imperial UK, Bangor John Hopkins Maryland Spain Burgos, Spain Burgos, Spain Bordeaux Tubingen Germany, Switz. Unknown ?	Review paper Spectrometer MODIS Identification Leaf area index Hyporheic exchange CO2 levels Catchment runoff Macroeconomics (In Spanish) Heat fluxes Thermal insulation (In French) Riverbed temperature ANN (In Chinese?)	Citation only? DHR No access DHR or citation only? DHR ARMIMA, comparison RIV DLR RIV, DLR Citation only? Citation only? (MicroCapt) Cite only DHR No access? DHR
Begon et al. (2009)	Liverpool UK, Aberdeen	Field voles	No access

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Reference	Address	Application	Functions
Belsley & Kont. (2009) Hong et al. (2009) Kwon et al. (2009) Ljung (2009) Meng et al. (2009) Ochieng & Otieno (2009) Pollock (2009a) Pollock (2009b) Romanowicz et al. (2009) Sun et al. (2009) Unknown (2009)	Boston USA, Queen Mary Seoul Korea Seoul Korea Linkoping Sweden Xian China Pretoria South Africa Unknown Unknown Poland (Renata) Gu and Seward 2012? ?	Econometrics Flux (In Korean) Evapotrans (In Korean) Identification CFD, control Rainfall flow Economic trends Survey paper Catchment Google confusion (In Chinese?)	No access (front only) Unclear DLR? RIV, CONSID RIV, PRBS RIV No access No access RIV No citation ?
Gu (2008) Kiczko (2008) Lauzon & Lence (2008) Malti et al. (2008) Trapero (2008) Svoboda et al. (2008)	Suzhou China 1 Laxenburg Austria Vancouver Canada CRAN France Ciudad Real (Pedregal) Vienna Austria	Lancaster LUCIE Reservoir Runoff Identification (In Spanish) 3G networks	RIV, PIP RIV TVP, citation only? CONSID, citation only DLR etc. DHR
Amisigo et al. (2007) Garnier et al. (2007) Levy et al. (2007) Pollock (2007b) Pollock (2007a) Stremme (2007)	Accra Ghana, Bonn CRAN France Sensis Corporation Leicester UK Leicester UK Germany	Riverflow (In French) Taxiing aircraft Filtering Economics, STAMP Climate (In German)	SDP Citation only DLR etc. No citation? Citation only DLR
Alavi et al. (2006) Amisigo (2006) Kioutsoukis et al. (2006)	Guelph Canada CSIR Ghana, Bon, Delft Xanthi Greece	Evapotranspiration Riverflow Precipitation	DLR, SDP SDP DLR, DHR

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Reference	Address	Application	Functions
Lambertz et al. (2006)	Madrid Spain	Dispersion in rivers	RIV
Pollock (2006b)	Queen Mary UK	Econometrics	Citation only
Pollock (2006a)	Queen Mary UK	Introduction	Citation only
Terpstra & Meijer (2006)	Amsterdam	Traffic flow	DHR
Hsieh (2005)	Taichun TW	Hand tool	No citation
Vigiak (2005)	Wageningen	Erosion	SDP
Zhu & Paul (1997)	NJ USA	Neural networks	No citation
Alegria & Bottura (n.d.)	Campinas Brazil	(In Spanish?)	ARX, SDP
Ochieng & Otieno (n.d.)	Pretoria RSA	Rainfall river	RIV, SDP
Ochieng et al. (n.d.)	Pretoria RSA	Rainfall river	RIV, SDP
Usevich & Markovsky (n.d.)	CRAN France, Brussels	Software	Citation only
Unknown (n.d.)	?	(In Chinese?)	?

Table 3: KU Leuven authors citing CAPTAIN.

Reference	M3-BIORES Academic	Application	Functions
Peña Fernández et al. (2019a)	Aerts	Bodyweight	RIV
Buekers et al. (2019)	Aerts	Pulmonary disease	RIV
Peña Fernández et al. (2019b)	Norton, Vranken, Berckmans	Pig growth	DTF, DLR
Youssef et al. (2019)	Aerts	NEED PDF	Cites TDC book
Bovet-Carmona et al. (2018)	Aerts	Synaptic plasticity	RIV
Adeyemi et al. (2018b)	Norton	Lettuce transpiration	RIV
Peña Fernández et al. (2018a)	Berckmans	Broiler growth	RIV
Norton et al. (2018)	Norton, Berckmans	Horse wearables	RIV

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Table 3 – *Continued from previous page*

Reference	M3-BIORES Academic	Application	Functions
Adeyemi et al. (2018a)	Norton	Lettuce transpiration	RIV
Peña Fernández et al. (2018b)	Norton, Berckmans	Particulates/Broiler	RIV
Peña Fernández et al. (2018)	Norton, Vranken, Berckmans	Pig growth	RIV, DLR
Peña Fernández et al. (2017)	Berckmans	Particulates/Broiler	RIV
Wolfs & Willems (2017)	Wolf, Willems (not M3-Biores)	River flow	RIV
Berckmans & Exadaktylos (2017)	Berckmans	PATENT	RIV
Tambuyzer et al. (2017)	Berckmans, Aerts	Heart rate	IRW
Haredasht et al. (2016)	Berckmans, Aerts	Bank voles	RIV
Tong et al. (2016)	Berckmans	Chicken eggs	RIV
Peña Fernández et al. (2016)	Norton, Vranken, Berckmans	Broiler quality	IRW
Lambrechts (2016)	KU Leuven PhD	Bioreactors	Various DBM
Topalovic et al. (2015)	Berckmans, Aerts	Pulmonary disease	RIV
Peña Fernández et al. (2015)	Vranken, Berckmans	Broiler behaviour	RIV
D'Haene et al. (2015)	Aerts	Finger cooling	RIV
Wolfs et al. (2015)	Wolf, Willems (not M3-Biores)	River flow	RIV, SDP
Lambrechts et al. (2014)	Aerts	NEED PDF	NEED PDF
Youssef et al. (2014b)	Berckmans	Chicken embryo	TVP
Youssef et al. (2014a)	Berckmans	Chicken embryo	RIV
Wolfs & Willems (2014)	Wolf, Willems (not M3-Biores)	Discharge curves	SDP
Lefever et al. (2014)	Berckmans, Aerts	Cyclist heart	RIV
Aerts et al. (2014)	Aerts	Critical illness	Citation only?
Lule et al. (2014)	Berckmans	Ventilation	NEED PDF
Marko et al. (2014)	Aerts, Berckmans	Pulmonary disease	RIV
Topalovic et al. (2014)	Berckmans	Pulmonary disease	RIV
Tambuyzer et al. (2014)	Berckmans, Aerts	Pig monitoring	IRW
Wolfs et al. (2013)	Wolf, Willems (not M3-Biores)	Sewers	RIV

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Reference	M3-BIORES Academic	Application	Functions
Wolfs & Willems (2013)	Wolf, Willems (not M3-Biores)	Floodplains	IRW, citation only?
Tambuyzer et al. (2012)	Berckmans, Aerts	Pig monitoring	NEED PDF
Ntoula et al. (2012)	Berckmans	Greenhouses	NEED PDF
De Bruyne et al. (2012)	Berckmans, Aerts	Cycle helmets	RIV
Volkaerts et al. (2012)	Berckmans	Greenhouses	NEED PDF
Haredasht et al. (2011)	Berckmans, Aerts	Nephropathia epidemica	RIV
De Bruyne et al. (2010)	Berckmans, Aerts	Cycle helmets	RIV
Silva et al. (2009)	Berckmans, Aerts	Pig cough	RIV
Thanh et al. (2008)	Berckmans, Vranken	Room temperature	RIV
Aerts et al. (2008)	Berckmans, Aerts	Horse heart	RIV

Table 4: Lancaster authors (excluding the developers).

Reference	Academic	Application	Functions
Page et al. (2018)	Page, Beven (LEC)	Phytoplankton	RIV
Deeprose (2018)	Wynn (LEC PhD)	Climate	DHR
Stefaniak (2016)	Jarvis (LEC MSc)	Macroecology	IRWSM
Durance et al. (2016)	Chappell (LEC)	Biodiversity	No Access
Smith (2015)	Wynn (LEC PhD)	Holecen climate	DHR
Trapero et al. (2015)	Kourentzes (Management)	Solar irradiation	DHR
Jones & Chappell (2014)	Chappell (LEC)	Streamflow, hydrogen	RIV, DTF
Ampadu et al. (2013)	Chappell (LEC)	Riverflow review	Citation only
Cross & Ma (2013)	Ma (Engineering)	Wind turbines	NEED PDF, SDP?
Zhang et al. (2013)	Ma (Engineering)	Wind turbines	RIV, PIP

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Table 4 – *Continued from previous page*

Reference	Academic	Application	Functions
Leedal et al. (2013)	Beven (LEC)	Flood forecasting	RIV, SDP
Gu et al. (2012)	Ma (Engineering)	Excavator control	RIV, PIP
Gu & Seward (2012)	Seward (Engineering)	Excavator control	RIV, PIP
Beven (2012)	Beven (LEC)	Rainfall runoff book	Citations only
Halliday et al. (2012)	Rowland (CEH)	Water quality	IRW, DHR
Ockenden & Chappell (2011)	Chappell (LEC)	Runoff	RIV
Trapero et al. (2011)	Fyldes (Management)	Judgmental Forecasts	SDP
Gu et al. (2011)	Ma (Engineering)	Excavator control	RIV, PIP
Gu & Seward (2009)	Seward (Engineering)	Excavator control	RIV, PIP
Romanowicz et al. (2007)	Romanowicz (then LEC)	Flood forecasting	SDP
Beven (2007)	Beven (LEC)	Environmental modelling	NEED PDF
Keery et al. (2007)	Binley (LEC)	Groundwater/surface	DHR

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Aliane, N., Fernandez, J. & Bemposta, S. (2013), ‘A spreadsheet method for continuous-time model identification’, *Measurement: Journal of the International Measurement Confederation* **46**(1), 680–687.

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Amisigo, B. A. (2006), *Modelling Riverflow in the Volta Basin of West Africa: a Data-Driven Framework*.

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