Judith L. Jacobsen - DTU Orbit (05/02/2018)

Judith L. Jacobsen

Organisations

Forskningsstipendiat, Department of Informatics and Mathematical Modeling
04/07/2003 → 03/09/2013 Former
VIP

Publications:

Grey-Box Modelling of Pharmacokinetic/Pharmacodynamic Systems

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Tornøe, C. W. (Intern), Jacobsen, J. L. (Intern), Pedersen, O. (Ekstern), Hansen, T. (Ekstern), Madsen, H. (Intern)
Pages: 401-417
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Pharmacokinetics and Pharmacodynamics
Volume: 31
Issue number: 5
ISSN (Print): 1567-567X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.8 SJR 0.696 SNIP 0.801
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.709 SNIP 0.953 CiteScore 1.77
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.696 SNIP 0.851 CiteScore 1.82
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.561 SNIP 0.802 CiteScore 1.7
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.974 SNIP 1.179 CiteScore 2.07
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.955 SNIP 1.109 CiteScore 2.2
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.884 SNIP 0.79
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.072 SNIP 1.226
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.024 SNIP 0.993
Scopus rating (2007): SJR 0.579 SNIP 0.938
Web of Science (2007): Indexed yes
Grey-box pharmacokinetic/pharmacodynamic modelling of a euglycaemic clamp study

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Tornøe, C. W. (Intern), Jacobsen, J. L. (Intern), Madsen, H. (Intern)
Pages: 591-604
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Mathematical Biology
Volume: 48
Issue number: 6
ISSN (Print): 0303-6812
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 0.838 SNIP 1.171 CiteScore 1.58
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.993 SNIP 1.329 CiteScore 1.58
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.971 SNIP 1.319 CiteScore 1.81
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.153 SNIP 1.433 CiteScore 2.12
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.402 SNIP 1.801 CiteScore 3.04
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.222 SNIP 1.622 CiteScore 2.74
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.27 SNIP 1.441
BFI (2009): BFI-level 2
Grey-box modelling of insulin clamp study

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Tornøe, C. W. (Intern), Jacobsen, J. L. (Intern), Madsen, H. (Intern)
Publication date: 2002
Event: Abstract from PAGE meeting, Paris.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 200560
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2002

A grey box model describing the hydraulics in a creek

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Jonsdottir, H. (Intern), Jacobsen, J. L. (Intern), Madsen, H. (Intern)
Pages: 347-356
Publication date: 2001
Main Research Area: Technical/natural sciences
Publication information
Journal: Environmetrics
Volume: 12
Issue number: 4
ISSN (Print): 1180-4009
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.59 SJR 0.944 SNIP 1.045
A Grey Box Model for the Hydraulics in a Creek

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Jonsdottir, H. (Intern), Jacobsen, J. L. (Intern), Madsen, H. (Intern)
Publication date: 1998

Host publication information
Title of host publication: Biometry at work towards environment 2000
Place of publication: Victoria Falls
Publisher: Environmetrics
Main Research Area: Technical/natural sciences
Conference: Biometry at Work Towards Environment 2000, Victoria Falls, 01/01/1998
Source: orbit
Source-ID: 170388
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998
A Method for Automatic Calibration of Parameters of an Integrated Model

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Department of Environmental Science and Engineering
Authors: Jacobsen, J. L. (Intern), Madsen, H. (Intern), Rauch, W. (Intern), Harremoes, P. (Intern)
Publication date: 1997

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 170390
Publication: Research - peer-review › Journal article – Annual report year: 1998

A Stochastic model for two-station hydraulics exhibiting transient impact

The objective of the paper is to interpret data on water level variation in a river affected by overflow from a sewer system during rain. The simplest possible, hydraulic description is combined with stochastic methods for data analysis and model parameter estimation. This combination of deterministic and stochastic interpretation is called grey box modelling.

As a deterministic description the linear reservoir approximation is used. A series of linear reservoirs in sufficient number will approximate a plug how reactor. The choice of number is an empirical expression of the longitudinal dispersion in the river. This approximation is expected to be a sufficiently good approximation as a tool for the ultimate aim: the description of pollutant transport in the river.

The grey box modelling involves a statistical tool for estimation of the parameters in the deterministic model. The advantage is that the parameters have physical meaning, as opposed to many other statistically estimated, empirical parameters. The identifiability of each parameter, the uncertainty of the parameter estimation and the overall uncertainty of the simulation are determined. (C) 1997 IAWQ. Published by Elsevier Science Ltd.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Department of Environmental Science and Engineering
Authors: Jacobsen, J. L. (Intern), Madsen, H. (Intern), Harremoës, P. (Intern)
Pages: 19-26
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Science and Technology
Volume: 36
Issue number: 5
ISSN (Print): 0273-1223
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.3 SJR 0.394 SNIP 0.621
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.466 SNIP 0.599 CiteScore 1.19
Dynamic modelling of processes in rivers affected by precipitation runoff

In this thesis, models for the dynamics of oxygen and organic matter in receiving waters (such as rivers and creeks), which are affected by rain, are developed. A time series analysis framework is used, but presented with special emphasis on continuous time state space models. Also, the concept of model identifiability is attended. For estimation of the parameters in the models the maximum likelihood method is used and the Kalman filter employed to evaluate the likelihood function. In the case of non-linear models, the extended Kalman filter is used. To evaluate the models, various residual analysis methods and model validation tools are employed. To develop the water quality model, including hydraulic relations and...
the states of oxygen and organic matter, the qualitative concepts of the physical, biological and chemical models are introduced. The model types used in this thesis are one-dimensional stochastic models. Most of the models are based on measurements from one measuring station, though models based on the linear reservoir description applied to measurements from two measuring stations are also considered. Both time varying and time invariant models are employed. In the models, the oxygen dynamic complex includes reaeration, photosynthesis, respiration and degradation of organic matter. The effect of pre-filtering data is investigated, as is various functions for photosynthesis as a function of solar radiation. For the degradation of organic matter delayed reactions have been studied. In most models, precipitation in the form of rain have been included to study the impact from this. Finally, the future and industrial perspectives are presented, along with a list of suggestions for future research related to the subjects considered in this thesis.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Jacobsen, J. L. (Intern)
Publication date: 1997

Publication information
Original language: English
Series: IMM-PHD-1997-30
Main Research Area: Technical/natural sciences
Electronic versions:
imm2439.ps
Source: orbit
Source-ID: 200801
Publication: Research › Ph.D. thesis – Annual report year: 1997

Estimation of a low pass filter for solar radiation data

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Department of Environmental Science and Engineering
Authors: Jacobsen, J. L. (Intern), Madsen, H. (Intern), Harremoes, P. (Intern)
Pages: 35-42
Publication date: 1997

Host publication information
Title of host publication: Progress in Industrial Mathamatics at ECMI 96
Place of publication: Stuttgart
Publisher: B.G. Teubner Stuttgart Leipzig
Editors: Brøns, M., Bendsøe, P., Sørensen, M. P.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 169783
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997

Approximating Building components using stochastic differential equations.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Hansen, L. H. (Intern), Jacobsen, J. L. (Intern), Nielsen, H. A. (Intern), Nielsen, T. S. (Intern)
Publication date: 1996

Host publication information
Title of host publication: System Identification Competition, Joint Research Centre, European Commission (EUR 16359)
Publisher: Bloem, J.J. (ed.)
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 165679
Publication: Research › Article in proceedings – Annual report year: 1996
Grey Box Modelling of Oxygen Levels in a Small Stream

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Madsen, H. (Intern), Jacobsen, J. L. (Intern)
Pages: pp. 109-121
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Environmetrics
Volume: 7
Original language: English
Source: orbit
Source-ID: 165160
Publication: Research - peer-review › Journal article – Annual report year: 1996

Modelling the transient impact of rain events on the oxygen content of a small creek

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Department of Environmental Science and Engineering
Authors: Jacobsen, J. L. (Intern), Madsen, H. (Intern), Harremoes, P. (Intern)
Pages: 177-185
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Science and Technology
Volume: 33
Issue number: 2
ISSN (Print): 0273-1223
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.3 SJR 0.394 SNIP 0.621
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.466 SNIP 0.599 CiteScore 1.19
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.587 SNIP 0.685 CiteScore 1.14
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.568 SNIP 0.7 CiteScore 1.3
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.601 SNIP 0.669 CiteScore 1.13
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.591 SNIP 0.626 CiteScore 1.25
ISI indexed (2011): ISI indexed yes
Technology management of transfer of knowledge within stochastic modelling.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Jacobsen, J. L. (Intern)
Number of pages: 35
Publication date: 1996

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 169785
Publication: Research - peer-review › Journal article – Annual report year: 1996

Databehandling og stokastisk modelling af regn og regnafstrømning i byer - Rapport til Den kommunale Momsfond herunder rapportering af projektet: "Bearbejdning af ti års regndata til projektering af afløbssystemer"

General information
State: Published
Organisations: Department of Environmental Science and Engineering, Department of Informatics and Mathematical Modeling
Authors: Harremoës, P. (Intern), Carstensen, N. J. (Intern), Mikkelsen, P. S. (Intern), Arnbjerg-Nielsen, K. (Intern), Jacobsen, J. L. (Intern)
Number of pages: 26
Projects:

Tidsrækkeanalyse og Danamisk Modellering af Regnvands påvirkede Recipienter

Department of Informatics and Mathematical Modeling
Period: 01/04/1994 → …
Number of participants: 2
Phd Student:
Jacobsen, Judith L. (Intern)
Main Supervisor:
Madsen, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD

Time series analysis and dynamic modelling of processes in rivers affected by precipitation runoff
Physical, chemical and biological processes involved in the oxygen dynamics in receiving waters are assessed through identification and estimation of stochastic dynamical models. The dynamics are expressed as a function of solar radiation, precipitation, surface runoff and runoff from urban sewer systems. The goal is a formulation in continuous time, which facilitates a direct physical interpretation and involves known physical laws and parameters in the model. The models will be used to assess the water quality of the receiving waters, with respect to the planning and management of water quality as well as the sensitivity to external influences. This will in turn increase the understanding of the complicated processes involved. The methods used, are the so-called "grey/box" techniques, which combine and exploit the strongest parts of the hitherto most used methodology. Here, known physical differential equations, as well as the data, are used to estimate parameters and possibly unknown processes. This means that non-linear processes can easily be included in the model, as opposed to traditional black-box models. Furthermore, stochastic effects, that any natural system will contain, can be accommodated.

Department of Informatics and Mathematical Modeling

PH-Consult Aps.
Period: 01/04/1994 → 31/05/1997
Number of participants: 4
Project participant:
Jacobsen, Judith L. (Intern)
Harremoes, Poul (Ekstern)
Linde Jensen, Jens Jørgen (Ekstern)
Project Manager, organisational:
Madsen, Henrik (Intern)

Financing sources
Source: Unknown
Name of research programme: Ukedt
Amount: 13,500.00 Danish Kroner
Project