Caries affected by calcium and fluoride in drinking water and family income

Water quality and socioeconomic influence caries in populations. This study broadens previous studies on how caries is associated with fluoride and calcium in drinking water and with family income by quantifying the combined effect of the three independent variables. The effects of calcium and fluoride can be described as independent effects of the two ions or, alternatively, in the form of saturation with respect to fluorite (CaF₂). A general linear model describes this relationship with high significance and the model confirms the important protective effect of calcium and fluoride, independently against caries. From the model, the relative importance of fluoride and calcium to protect against caries is quantified. The relationship between caries and family income is also highly significant. It is illustrated how the linear model can be applied in planning and analyzing drinking water softening in relation to caries.
Multivariate ARIMA and ARIMA-X Analysis: Package ‘marima’
Multivariate arima and arima-x estimation using Spliid's algorithm.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Spliid, H. (Intern)
Number of pages: 21
Publication date: 2016

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
marima.pdf
Links: https://cran.rstudio.com/web/packages/marima/index.html
Source: PublicationPreSubmission
Source-ID: 123938104
Publication: Research › Book – Annual report year: 2016

Multivariate Time Series Estimation using marima
A computer program, called marima, written in the open source language, R, has been developed. Some of marima’s facilities and ideas are presented in the following.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Spliid, H. (Intern)
Pages: 108-123
Publication date: 2016
Enabling optimization in LCA: from "ad hoc" to "structural" LCA approach—based on a biodiesel well-to-wheel case study

**Purpose**

Applied life cycle assessment (LCA) studies often lead to a comparison of rather few alternatives; we call this the “ad hoc LCA approach.” This can seem surprising since applied LCAs normally cover countless options for variations and derived potentials for improvements in a product life cycle. In this paper, we will suggest an alternative approach to the ad hoc approach, which more systematically addresses the many possible variations to identify the most promising. We call it the “structural LCA approach.” The goals of this paper are (1) to provide basic guidelines for the structural approach, including an easy expansion of the LCA space; (2) to show that the structural LCA approach can be used for different types of optimization in LCA; and (3) to improve the transparency of the LCA work.

**Methods**

The structural approach is based on the methodology “design of experiments” (Montgomery 2005). Through a biodiesel well-to-wheel study, we demonstrate a generic approach of applying explanatory variables and corresponding impact categories within the LCA methodology. Explanatory variables are product system variables that can influence the environmental impacts from the system. Furthermore, using the structural approach enables two different possibilities for optimization: (1) single-objective optimization (SO) based on response surface methodology (Montgomery 2005) and (2) multiobjective optimization (MO) by the hypervolume estimation taboo search (HETS) method. HETS enables MO for more than two or three objectives.

**Results and discussion**

Using SO, the explanatory variable “use of residual straw from fields” is, by far, the explanatory variable that can contribute with the highest decrease of climate change potential. For the respiratory inorganics impact category, the most influencing explanatory variable is found to be the use of different alcohol types (bioethanol or petrochemical methanol) in biodiesel production. Using MO, we found the Pareto front based on 5 different life cycle pathways which are nondominated solutions out of 66 different analyzed solutions. Given that there is a fixed amount of resources available for the LCA practitioner, it becomes a prioritizing problem whether to apply the structural LCA approach or not. If the decision maker only has power to change a single explanatory variable, it might not be beneficial to apply the structural LCA approach. However, if the decision maker (such as decision makers at the societal level) has power to change more explanatory variables, then the structural LCA approach seems beneficial for quantifying and comparing the potentials for environmental improvement between the different explanatory variables in an LCA system and identifying the overall most promising product system configurations among the chosen PWs.

**Conclusions**

The implementation of the structural LCA approach and the derived use of SO and MO have been successfully achieved and demonstrated in the present paper. In addition, it is demonstrated that the structural LCA approach can lead to more transparent LCAs since the potentially most important explanatory variables which are used to model the LCAs are explicitly presented through the structural LCA approach. The suggested structural approach is a new approach to LCA and it seems to be a promising approach for searching or screening product systems for environmental optimization potentials. In the presented case, the design has been a rather simple full factorial design. More complicated problems or designs, such as fractional designs, nested designs, split plot designs, and/or unbalanced data, in the context of LCA could be investigated further using the structural approach.
Design of experiments, LCA, Optimization, Rapeseed biodiesel, Structural approach

DOIs:
Improved overall survival after implementation of targeted therapy for patients with metastatic renal cell carcinoma: Results from the Danish Renal Cancer Group (DARENCA) study-2

Abstract

Aim To evaluate the implementation of targeted therapy on overall survival (OS) in a complete national cohort of patients with metastatic renal cell carcinoma (mRCC). Methods All Danish patients with mRCC referred for first line treatment with immunotherapy, TKIs or mTOR-inhibitors between 2006 and 2010 were included. Baseline and outcome data were collected retrospectively. Prognostics factors were identified using log-rank tests and Cox proportional hazard model. Differences in distributions were tested with the Chi-square test. Results 1049 patients were referred; 744 patients received first line treatment. From 2006 to 2010 we observed a significant increase in the number of referred patients; a significant increase in treated patients (64% versus 75%, P = 0.0188); a significant increase in first line targeted therapy (22% versus 75%, P < 0.0001); a significant increase in second line treatment (20% versus 40%, P = 0.0104), a significant increased median OS (11.5 versus 17.2 months, P = 0.0435) whereas survival for untreated patients remained unchanged. Multivariate analysis validated known prognostic factors. Moreover, treatment start years 2008 (HR 0.74, 95% CI, 0.55–0.99; P = 0.0415), 2009 (HR 0.72, 95% CI, 0.54–0.96; P = 0.0277) and 2010 (HR 0.63, 95% CI, 0.47–0.86; P = 0.0035) compared to 2006, and more than two treatment lines received for patients with performance status 0–1 (HR 0.76, 95% CI, 0.58–0.99; P = 0.0397) and performance status 2–3 (HR 0.19, 95% CI, 0.06–0.60; P = 0.0051) were significantly associated with longer OS. Conclusion This retrospective study documents that the implementation of targeted therapy has resulted in significantly improved treatment rates and overall survival in a complete national cohort of treated mRCC patients.

General information

State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Aarhus University, Odense University Hospital, Aalborg University Hospital, Pfizer Oncology, Copenhagen University Hospital
Authors: Sørensen, A. V. (Ekstern), Donskov, F. (Forskerdatabase), Hermann, G. G. (Forskerdatabase), Jensen, N. V. (Ekstern), Petersen, A. (Forskerdatabase), Spliid, H. (Intern), Sandin, R. (Ekstern), Fode, K. (Forskerdatabase), Geertsen, P. F. (Forskerdatabase)
Pages: 553–562
Publication date: 2014
Main Research Area: Technical/natural sciences

Publication information

Journal: European Journal of Cancer
Volume: 50
Issue number: 3
ISSN (Print): 0959-8049
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): SJR 3.011 SNIP 2.163 CiteScore 6.1
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 3.129 SNIP 2.111 CiteScore 5.89
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.574 SNIP 1.861 CiteScore 5.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.855 SNIP 2.055 CiteScore 5.65
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.962 SNIP 2.155 CiteScore 5.79
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.465 SNIP 1.889 CiteScore 5.19
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
Statistical prediction of biomethane potentials based on the composition of lignocellulosic biomass

Mixture models are introduced as a new and stronger methodology for statistical prediction of biomethane potentials (BMP) from lignocellulosic biomass compared to the linear regression models previously used. A large dataset from literature combined with our own data were analysed using canonical linear and quadratic mixture models. The full model to predict BMP (R^2>0.96), including the four biomass components cellulose (x_C), hemicellulose (x_H), lignin (x_L) and residuals (x_R=1-x_C-x_H-x_L) had highly significant regression coefficients. It was possible to reduce the model without substantially affecting the quality of the prediction, as the regression coefficients for x_C, x_H and x_R were not significantly different based on the dataset. The model was extended with an effect of different methods of analysing the biomass constituents content (DA) which had a significant impact. In conclusion, the best prediction of BMP is p_{BMP}=347x_C+x_H+x_L-438x_L+63DA.

General information

State: Published
Organisations: Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Ecosystems Programme
Authors: Thomsen, S. T. (Intern), Spliid, H. (Intern), Østergård, H. (Intern)
Pages: 80-86
Publication date: 2014
Main Research Area: Technical/natural sciences

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Journal: Bioresource Technology
Volume: 154
ISSN (Print): 0960-8524
Ratings:
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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): CiteScore 5.94 SJR 2.191 SNIP 1.91
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
The Statistical Value Chain - a Benchmarking Checklist for Decision Makers to Evaluate Decision Support Seen from a Statistical Point-Of-View

When decisions are made, by decision makers (DMs) in private and public organizations the DMs are supported by analysts (ANs) who provide decision support to the DM. Therefore, the quality of decision support provided by the AN directly affects the quality of a DM’s decision. At present, many quantitative methods exist for evaluating uncertainty—for example, Monte Carlo simulation—and such methods work very well when the AN is in full control of the data collection and model-building processes. In many cases, however, the AN is not in control of these processes. In this article we develop a simple method that a DM can employ in order to evaluate the process of decision support from a statistical point-of-view. We call this approach the “Statistical Value Chain” (SVC): a consecutive benchmarking checklist with eight...
steps that can be used to evaluate decision support seen from a statistical point-of-view.

**General information**

State: Published
Organisations: Department of Management Engineering, Systems Analysis, DTU Climate Centre, Energy Systems Analysis, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, University of Southampton, University of Copenhagen
Authors: Herrmann, I. T. (Intern), Henningsen, G. (Intern), Wood, C. D. (Ekstern), Blake, J. I. R. (Ekstern), Mortensen, J. B. (Ekstern), Spliid, H. (Intern)
Pages: 71-83
Publication date: 2013
Main Research Area: Technical/natural sciences

**Publication information**

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Volume: 4
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Original language: English
Statistical Value Chain, Decision Theory, Benchmarking Checklist, Decision Makers, Evaluate, Decision Support, Statistics, Data Analysis, Uncertainty, Quality
Electronic versions: THE_STATISTICAL_VALUE_CHAIN.pdf
Source: PublicationPreSubmission
Source-ID: 101105312
Publication: Research - peer-review › Journal article – Annual report year: 2014

**Microbial Community-Level Physiological Profiles (CLPP) and herbicide mineralization potential in groundwater affected by agricultural land use**

Diffuse groundwater pollution from agricultural land use may impact the microbial groundwater community, which was investigated as Community-Level Physiological Profiles (CLPP) using EcoPlate™. Water was sampled from seven piezometers and a spring in a small agricultural catchment with diffuse herbicide and nitrate pollution. Based on the Shannon–Wiener and Simpson's diversity indices the diversity in the microbial communities was high. The response from the EcoPlates™ showed which substrates support groundwater bacteria, and all 31 carbon sources were utilized by organisms from at least one water sample. However, only nine carbon sources were utilized by all water samples: d-Mannitol, N-acetyl-d-glucosamine, putrescine, d-galacturonic acid, itaconic acid, 4-hydroxy benzoic acid, tween 40, tween 80, and l-asparagine. In all water samples the microorganisms preferred d-mannitol, d-galacturonic acid, tween 40, and 4-hydroxy benzoic acid as substrates, whereas none preferred 2-hydroxy benzoic acid, α-d-lactose, d,l-α-glycerol phosphate, α-ketobutyric acid, l-threonine and glycy1-l-glutamic acid. Principal Component Analysis of the CLPP's clustered the most agriculturally affected groundwater samples, indicating that the agricultural land use affects the groundwater microbial communities. Furthermore, the ability to mineralize atrazine and isoproturon, which have been used in the catchment, was also associated with this cluster.

**General information**

State: Published
Organisations: Department of Environmental Engineering, Water Resources Engineering, Department of Informatics and Mathematical Modeling, DTU Data Analysis, Mathematical Statistics, Urban Water Engineering
Authors: Janniche, G. S. (Intern), Spliid, H. (Intern), Albrechtsen, H. (Intern)
Pages: 45-55
Publication date: 2012
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Journal of Contaminant Hydrology
Volume: 140
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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 2.26 SJR 0.982 SNIP 1.065
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.951 SNIP 1.083 CiteScore 2.12
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.319 SNIP 1.516 CiteScore 2.4
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.501 SNIP 1.453 CiteScore 3.04
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.595 SNIP 1.686 CiteScore 2.97
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.396 SNIP 1.572 CiteScore 2.49
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.352 SNIP 1.186
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.323 SNIP 1.33
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.41 SNIP 1.55
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.595 SNIP 1.36
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.455 SNIP 1.507
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.378 SNIP 1.337
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.381 SNIP 1.392
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.329 SNIP 1.482
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.978 SNIP 1.7
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.563 SNIP 1.09
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.058 SNIP 1.044
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.455 SNIP 0.947
Original language: English
Diversity, Microbial degradation, Pesticide, Aquifer, Biolog EcoPlate
DOIs:
10.1016/j.jconhyd.2012.08.008
Source: dtu
Source-ID: n:oai:DTIC-ART:elsevier/371148958::20124
Publication: Research - peer-review › Journal article – Annual report year: 2012

Caries og drikkevandets kvalitet

General information
State: Published
Implementation of multivariate linear mixed-effects models in the analysis of indoor climate performance experiments

The aim of the current study was to apply multivariate mixed-effects modeling to analyze experimental data on the relation between air quality and the performance of office work. The method estimates in one step the effect of the exposure on a multi-dimensional response variable, and yields important information on the correlation between the different dimensions of the response variable, which in this study was composed of both subjective perceptions and a two-dimensional performance task outcome. Such correlation is typically not included in the output from univariate analysis methods. Data originated from three different series of experiments investigating the effects of air quality on performance. The example analyses resulted in a significant and positive correlation between two performance tasks, indicating that the two tasks to some extent measured the same dimension of mental performance. The analysis seems superior to conventional univariate statistics and the information provided may be important for the design of performance experiments in general and for the conclusions that can be based on such studies.

General information
State: Published
Organisations: DTU Data Analysis, Department of Informatics and Mathematical Modeling, ALECTIA A/S
Authors: Jensen, K. L. (Ekstern), Spliid, H. (Intern), Toftum, J. (Intern)
Pages: 129-136
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Main Research Area: Technical/natural sciences

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Journal: International Journal of Biometeorology
Volume: 56
Issue number: 1
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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): SJR 0.792 SNIP 1.223 CiteScore 2.25
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.729 SNIP 1.226 CiteScore 1.9
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.811 SNIP 1.448 CiteScore 2.66
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.738 SNIP 1.341 CiteScore 2.29
An Exponentially Weighted Moving Average Control Chart for Bernoulli Data

We consider a production process in which units are produced in a sequential manner. The units can, for example, be manufactured items or services, provided to clients. Each unit produced can be a failure with probability $p$ or a success (non-failure) with probability $(1-p)$. A novel exponentially weighted moving average (EWMA) control chart intended for surveillance of the probability of failure, $p$, is described. The chart is based on counting the number of non-failures produced between failures in combination with a variance-stabilizing transformation. The distribution function of the transformation is given and its limit for small values of $p$ is derived. Control of high yield processes is discussed and the chart is shown to perform very well in comparison with both the most common alternative EWMA chart and the CUSUM chart. The construction and the use of the proposed EWMA chart are described and a practical example is given. It is demonstrated how the method communicates the current failure probability in a direct and interpretable way, which makes it well suited for surveillance of a great variety of activities in industry or in the service sector such as in hospitals, for example. Copyright (C) 2009 John Wiley & Sons, Ltd.
adverse events, high yield process, EWMA, on-line monitoring, ARL function
Caries hos børn og unge påvirkes af drikkevandskvaliteten

General information
State: Published
Organisations: Urban Water Engineering, Department of Environmental Engineering, DTU Data Analysis, Department of Informatics and Mathematical Modeling, University of Copenhagen
Authors: Arvin, E. (Intern), Bardow, A. (Ekstern), Bruvo, M. (Ekstern), Rygaard, M. (Intern), Spliid, H. (Intern)
Pages: 16-19
Publication date: 2010
Main Research Area: Technical/natural sciences

Publication information
Journal: DanskVand
Volume: 78
Issue number: 6
ISSN (Print): 1602-3609
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Electronic versions:
18D39d01.pdf
Links:
http://www.e-pages.dk/danva/88/1/?query=Caries%20hos%20børn%20på%20virkes%20af%20drikkevandskvaliteten
Source: orbit
Source-ID: 312755
Publication: Research › Journal article – Annual report year: 2011

Dental caries affected by water quality and water treatment

General information
State: Published
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling
Authors: Arvin, E. (Intern), Bardow, A. (Ekstern), Bruvo, M. (Ekstern), Ekstrand, K. (Ekstern), Spliid, H. (Intern)
Pages: 2986R1
Publication date: 2010

Host publication information
Title of host publication: Proceedings of the World Water Congress and Exhibition
Publisher: International Water Association
Main Research Area: Technical/natural sciences
Conference: IWA World Water Congress & Exhibition, Montréal, Canada, 19/09/2010 - 19/09/2010
Source: orbit
Source-ID: 267388
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2010

Fluoridering af drikkevandet i Danmark?: Er der alternativer? Hvor meget vil blødgøring af drikkevandet øge forekomsten af dental caries hos børn og unge?

General information
State: Published
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling
Authors: Arvin, E. (Intern), Spliid, H. (Intern), Bruvo, M. (Ekstern), Bardow, A. (Ekstern), Ekstrand, K. (Ekstern)
Publication date: 2010

Host publication information
Title of host publication: Dansk Vand Konference 2010 : Orientering om foredrag
Publisher: Dansk Vand- og Spildevandsforening - DANVA
Main Research Area: Technical/natural sciences
Conference: Dansk Vand Konference 2010, Copenhagen, Denmark, 12/10/2010 - 12/10/2010
Source: orbit
Optimal drinking water composition for caries control in populations

Apart from the well-documented effect of fluoride in drinking water on dental caries, little is known about other chemical effects. Since other ions in drinking water may also theoretically influence caries, as well as binding of fluoride in the oral environment, we hypothesized that the effect of drinking water on caries may not be limited to fluoride only. Among 22 standard chemical variables, including 15 ions and trace elements as well as gases, organic compounds, and physical measures, iterative search and testing identified that calcium and fluoride together explained 45% of the variations in the numbers of decayed, filled, and missing tooth surfaces (DMF-S) among 52,057 15-year-old schoolchildren in 249 Danish municipalities. Both ions had reducing effects on DMF-S independently of each other, and could be used in combination for the design of optimal drinking water for caries control in populations.
Composition of source-sorted municipal organic waste collected in Danish cities

Source-sorted municipal organic waste from different dwelling types in five Danish cities was sampled during one year. The samples were from permanent, full-scale systems or temporary, experimental systems for collection of source-sorted municipal organic waste. Pre-treatment of the organic waste prior to biological treatment was used in all cities to remove foreign objects and provide size reduction. All sampling was performed after pre-treatment in order to obtain more homogeneous and representative samples. The sampling included both the pre-treated waste and the reject from the pre-treatment allowing for estimation of the composition of the original waste. A total of 40 waste samples were chemically characterised with respect to 15 parameters. The waste generally consisted of around 88% VS of which an average of 80% was easily degradable. The average content of N, P and K in the dry matter of the organic waste was 2.5%, 0.4% and 0.9%, respectively. A general analysis of variance was applied to show the influence of the collection system, dwelling type and annual season on the waste composition. The content of plastic and crude fibres in the waste differed the most among the samples, probably due to use of different bag types (plastic and paper) in the different collection systems. Variations in the ash content and the calorific value might be explained by differences in the sorting instructions (whether
soil and cat litter are allowed in the organic fraction). Significant seasonal variations were seen for ash, S and Cl. Dwelling type showed no statistically significant influence on any waste components. A test for uniform distribution of the p-values from the analysis of variance (Kolmogorov-Smirnov test) showed that the overall composition of the collected waste was strongly affected by the collection system (city) and season, while dwelling type had no significant influence. (c) 2006 Elsevier Ltd. All rights reserved.
Method for fractional solid-waste sampling and chemical analysis

Chemical characterization of solid waste is a demanding task due to the heterogeneity of the waste. This article describes how 45 material fractions hand-sorted from Danish household waste were subsampled and prepared for chemical analysis of 61 substances. All material fractions were subject to repeated particle-size reduction, mixing, and mass reduction until a sufficiently small but representative sample was obtained for digestion prior to chemical analysis. The waste-fraction samples were digested according to their properties for maximum recognition of all the studied substances. By combining four subsampling methods and five digestion methods, paying attention to the heterogeneity and the material characteristics of the waste fractions, it was possible to determine 61 substances with low detection limits, reasonable variance, and high accuracy. For most of the substances of environmental concern, the waste-sample concentrations were above the detection limit (e.g. Cd > 0.001 mg kg⁻¹, Cr > 0.01 mg kg⁻¹, Hg > 0.002 mg kg⁻¹, Pb > 0.005 mg kg⁻¹). The variance was in the range of 5-100%, depending on material fraction and substance as documented by repeated sampling of two highly different material fractions ("Vegetable food" and "Shoes, leather, etc."). Statistical analysis showed for the "Vegetable food" that the variance could not be attributed to a single step in the procedure, whereas in the case of "Shoes, leather, etc.", the first coarse shredding was the main source of variance (20-85% of the overall variation). Only by increasing the sample size significantly can this variance be reduced. The accuracy and short-term reproducibility of the chemical characterization were good, as determined by the analysis of several relevant certified reference materials. Typically, six to eight different certified reference materials representing a range of concentrations levels and matrix characteristics were included. Based on the documentation provided, the methods introduced were considered satisfactory for characterization of the chemical composition of waste-material fractions. ©CPY 2007 Taylor & Francis.

General information
State: Published
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling
Authors: Riber, C. (Intern), Rodushkin, I. (Ekstern), Spliid, H. (Intern), Christensen, T. H. (Intern)
Pages: 321-335
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: International Journal of Environmental Analytical Chemistry
Volume: 87
Issue number: 5
ISSN (Print): 0306-7319
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): SJR 0.378 SNIP 0.521 CiteScore 1.28
Monitoring medical procedures by exponential smoothing

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Pages: 236-236
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Statistics in Medicine
Volume: 26
Issue number: 1
ISSN (Print): 0277-6715
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
Geochemical and microbial processes in the insaturated zone at the Arrenæs artificial recharge trial plant

**General information**

State: Published  
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Københavns kommunes miljøkontrol  
Authors: Jensen, T. Ø. (Ekstern), Berg, R. L. (Ekstern), Bennedsen, L. (Ekstern), Brandt, G. (Ekstern), Spliid, H. (Intern)  
Publication date: 2005

**Host publication information**

Title of host publication: ISMAR conference, Berlin  
Main Research Area: Technical/natural sciences  
Conference: ISMAR conference, Berlin, 01/01/2005  
Links:  
http://www2.imm.dtu.dk/pubdb/p.php?4391
Assessment of sampling and chemical analysis of source-separated organic household waste

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Department of Environmental Engineering
Authors: Jansen, J. L. C. (Ekstern), Spliid, H. (Intern), Hansen, T. L. (Intern), Hansen, T. L. (Intern), Svärd, Å. (Ekstern), Christensen, T. H. (Intern)
Pages: 541-549
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Waste Management
Volume: 24
Issue number: 6
ISSN (Print): 0956-053X
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): CiteScore 4 SJR 1.354 SNIP 2.044
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.739 SNIP 2.256 CiteScore 4.33
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.777 SNIP 2.482 CiteScore 3.43
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.822 SNIP 2.435 CiteScore 3.39
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.611 SNIP 2.184 CiteScore 2.91
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.698 SNIP 2.085 CiteScore 2.99
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.555 SNIP 1.78
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.502 SNIP 1.899
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.378 SNIP 2.13
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.035 SNIP 1.767
Incidensanalyse ved procesovervågning i klinisk praksis

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern), Lophaven, S. N. (Intern), Merser, S. (Ekstern), Borgwardt, A. (Ekstern)
Publication date: 2004

Host publication information
Title of host publication: Patientsikkerhedskonferencen, 3. april
Publisher: Dansk Selskab for Patientsikkerhed
Main Research Area: Technical/natural sciences
Links:
Source: orbit
Source-ID: 154547
Publication: Research - peer-review › Journal article – Annual report year: 2004

Mikrobielle forureninger - Vi ser kun toppen af isbjerget

General information
State: Published
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling
Authors: Boe-Hansen, R. (Intern), Albrechtsen, H. (Intern), Arvin, E. (Intern), Spliid, H. (Intern)
Pages: 86-90
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: DanskVand
Volume: 71
Issue number: 2
ISSN (Print): 1602-3609
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: Danish
Source: orbit
Source-ID: 43376
From experimental design to uncertainty estimation for the European Pharmacopoeia HPLC analysis of human insulin

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Brix, R. (Ekstern), Spliid, H. (Intern), Hansen, S. H. (Ekstern), Sørensen, E. (Ekstern)
Pages: 1676-1681
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: Analyst
Volume: 127
Issue number: 12
ISSN (Print): 0003-2654
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 3.92
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 4.07
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 4.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 4.11
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.88
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 4.16
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2002): Indexed yes
Web of Science (2001): Indexed yes
Original language: English
Links:
Source: orbit
Source-ID: 58063
Modelling and monitoring in injection molding

This thesis is concerned with the application of statistical methods in quality improvement of injection molded parts. The methods described are illustrated with data from the manufacturing of parts for a medical device. The emphasis has been on the variation between cavities in multi-cavity molds. From analysis of quality measurements from a longer period of manufacturing, it was found that differences in cavities was the main source of variation with greatest influence on the length of the molded parts. The other large contribution to the length variation was the different machine settings. Samples taken within the same machine set-point did not cause great variation compared to the two preceding sources of variation. A simple graphical approach is suggested for finding patterns in the cavity differences. Applying this method to data from a 16 cavity mold, a clear connection was found between a parts length and the producing cavities position in the mold. In a designed experiment it was possible to isolate the machine parameters contributing to the variation between cavities. Thus, with a proper choice of levels for the machine variables, it was possible to reduce the variation between cavities substantially. Also an alternative model for the shrinkage of parts from a multi-cavity mold is suggested. From applying the model to data from a shrinkage study, it seemed that the observed part differences were not only due to differences in cavity dimensions. A model for the in-control variation for a multi-cavity molding process was suggested. Based on this model, control charting procedures have been suggested for monitoring the quality of the molded parts. Moreover, a capability index for multi-cavity molds has been suggested. Furthermore an alternative method for in-line quality charting is suggested. The method is for continuous control by attributes, and it is an alternative to the batch oriented approach mostly used. The procedure is especially efficient for quality requirements of very low proportion non-conformities. For the proposed charts the ARL function is derived. It is shown that in the case where a non-conforming unit is only expected very rarely during sampling, a moving sum chart and a CUSUM chart are equivalent. Finally, the correlation structure of 21 process variables has been studied prior to monitoring the process. It is illustrated how the process can be analysed with multivariate techniques. It was found that two principal components reflected changes in machine set-points. Thus, there seems to be great potential in monitoring the process variables using a multivariate approach.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Thyregod, P. (Intern), Spliid, H. (Intern), Melgaard, H. (Intern), Madsen, H. (Intern)
Publication date: Apr 2001

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions: imm788.pdf
Links:
Source: orbit
Source-ID: 58005
Publication: Research › Ph.D. thesis – Annual report year: 2001

Statistical analysis of time to event data from safety pharmacology studies

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Andersen, H. (Intern), Spliid, H. (Intern), Larsen, S. (Ekstern), Dall, V. (Ekstern)
Pages: 111-125
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Toxicology methods
Volume: 10
Issue number: 2
ISSN (Print): 1051-7235
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2004): SJR 0.228 SNIP 0.402
Scopus rating (2003): SJR 0.156 SNIP 0.471
Scopus rating (2002): SJR 0.188 SNIP 0.338
Statistical models for toxicity and safety pharmacological studies

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Andersen, H. (Intern), Spliid, H. (Intern), Larsen, S. (Ekstern)
Pages: 631-643
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Drug Information Journal
Volume: 34
Original language: English
Source: orbit
Source-ID: 176380
Publication: Research - peer-review › Journal article – Annual report year: 2000

Consistency in Statistical Analysis of Standardized Toxicity

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics, Novo Nordisk A/S
Authors: Andersen, H. (Intern), Spliid, H. (Intern), Larsen, S. (Ekstern), Christensen, N. D. (Ekstern)
Pages: 71-89
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Toxicology methods
Volume: 9
Issue number: 2
ISSN (Print): 1051-7235
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2004): SJR 0.228 SNIP 0.402
Scopus rating (2003): SJR 0.156 SNIP 0.471
Scopus rating (2002): SJR 0.188 SNIP 0.338
Scopus rating (2001): SJR 0.179 SNIP 0.129
Scopus rating (2000): SJR 0.317 SNIP 0.543
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.24 SNIP 0.422
Original language: English
Source: orbit
Source-ID: 172430
Publication: Research - peer-review › Journal article – Annual report year: 1999

Multivariate statistical analysis of organ weight in toxicity studies

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Selective Flow Injection Analysis of Ultra-trace Amounts of Cr(VI), Preconcentration of It by Solvent Extraction, and Determination by Electrothermal Atomic Absorption Spectrometry (ETAAS)

A rapid, robust, sensitive and selective time-based flow injection (FI) on-line solvent extraction system interfaced with electrothermal atomic absorption spectrometry (ETAAS) is described for analyzing ultra-trace amounts of Cr(VI). The sample is initially mixed on-line with isobutyl methyl ketone (IBMK). The Cr(VI) is complexed by reaction with ammonium pyrrolidine dithiocarbamate (APDC), and the non-charged Cr(VI)-PDC chelate formed is extracted into IBMK in a knotted reactor made from PTFE tubing. The organic extractant is separated from the aqueous phase by a gravity phase separator with a small conical cavity and delivered into a collector tube, from which 55 μl organic concentrate is subsequently introduced via an air flow into the graphite tube of the ETAAS instrument. The operations of the FI-system and the ETAAS detector are synchronously coupled. A significant advantage of the approach is that matrix constituents, such as high salt contents, effectively are eliminated. The extraction procedure was optimized by a simplex approach. A central composite design was subsequently employed to verify the estimated operational optimum. An 18-fold enhancement in sensitivity of Cr(VI) was achieved after preconcentration for 99 s at a sample flow rate of 5.5 ml min−1, as compared to direct introduction of 55 μl of sample, yielding a detection limit (3σ) of 3.3 ng l−1. The sampling frequency was 24.2 samples h−1. The proposed method was successfully evaluated by analyzing a NIST Cr(VI)-reference material, synthetic seawater and waste waters, and waste water samples from an incineration plant and a desulphurization plant, respectively.

General information
State: Published
Organisations: Department of Chemistry
Authors: Nielsen, S. (Intern), Sturup, S. (Intern), Spliid, H. (Intern), Hansen, E. H. (Intern)
Pages: 1027-1044
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Talanta
Volume: 49
Issue number: 5
ISSN (Print): 0039-9140
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): SJR 1.162 SNIP 1.27 CiteScore 4.19
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.187 SNIP 1.327 CiteScore 3.99
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.201 SNIP 1.296 CiteScore 3.71
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.201 SNIP 1.399 CiteScore 3.74
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.421 SNIP 1.46 CiteScore 3.74
ISI indexed (2012): ISI indexed yes
Continuous ecotoxicological data evaluated relative to a control response

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics, Department of Environmental Engineering, Department of Environmental Science and Engineering
Authors: Andersen, J. S. (Intern), Holst, H. (Intern), Spliid, H. (Intern), Andersen, H. (Intern), Baun, A. (Intern), Nyholm, N. (Intern)
Pages: 405-420
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Agricultural, Biological, and Environmental Statistics
Volume: 3
Issue number: 4
ISSN (Print): 1085-7117
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Examination of reproducibility in microbiological degradation experiments

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics, Department of Environmental Engineering
Authors: Sommer, H. M. (Intern), Spliid, H. (Intern), Holst, H. (Intern), Arvin, E. (Intern)
Pages: 65-82
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Biodegradation
Volume: 9
Issue number: 1
ISSN (Print): 0923-9820
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): SJR 0.804 SNIP 1.069 CiteScore 2.41  
BFI (2015): BFI-level 1  
Scopus rating (2015): SJR 0.888 SNIP 1.055 CiteScore 2.37  
BFI (2014): BFI-level 1  
Scopus rating (2014): SJR 0.968 SNIP 1.195 CiteScore 2.42  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 1  
Scopus rating (2013): SJR 1.103 SNIP 1.435 CiteScore 2.63  
ISI indexed (2013): ISI indexed yes  
BFI (2012): BFI-level 1  
Scopus rating (2012): SJR 1.113 SNIP 1.213 CiteScore 2.22  
ISI indexed (2012): ISI indexed yes  
BFI (2011): BFI-level 1  
Scopus rating (2011): SJR 1.052 SNIP 1.102 CiteScore 2.31  
ISI indexed (2011): ISI indexed yes  
BFI (2010): BFI-level 1  
Scopus rating (2010): SJR 1.096 SNIP 0.991  
BFI (2009): BFI-level 1  
Scopus rating (2009): SJR 1.009 SNIP 1.208  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 0.961 SNIP 1.193  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 0.874 SNIP 1.107  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 0.984 SNIP 1.105  
Scopus rating (2005): SJR 0.805 SNIP 0.953  
Scopus rating (2004): SJR 0.87 SNIP 0.765  
Scopus rating (2003): SJR 0.738 SNIP 0.854  
Scopus rating (2002): SJR 0.815 SNIP 0.686  
Web of Science (2002): Indexed yes  
Scopus rating (2001): SJR 0.651 SNIP 0.954  
Scopus rating (2000): SJR 0.688 SNIP 0.81  
Web of Science (2000): Indexed yes  
Scopus rating (1999): SJR 0.87 SNIP 0.676  
Original language: English  
Source: orbit  
Source-ID: 170489  
Publication: Research - peer-review › Journal article – Annual report year: 1998

**Multivariat Analyse**

**General information**
State: Published  
Organisations: Department of Informatics and Mathematical Modeling  
Authors: Spliid, H. (Intern)  
Publication date: 1998  
Main Research Area: Technical/natural sciences  

**Publication information**
Journal: Den Store Danske Encyclopaedi  
Volume: M  
Issue number: 1
Performance evaluation of Ground Water Reference Material by

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics, VKI Water Quality Institute, MIKE, DMU
Authors: Schramm-Nielsen, K. E. (Intern), Merry, J. (Ekstern), Nyeland, B. (Ekstern), Spliid, N. (Ekstern), Spliid, H. (Intern)
Pages: 99-107
Publication date: 1998
Main Research Area: Technical/natural sciences

Pesticide analysis in ground water: Statistical evaluation of certification data of a multicomponent reference material

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, VKI Water Quality Institute, MIKE, DMU
Authors: Schramm-Nielsen, K. E. (Intern), Merry, J. (Ekstern), Nyeland, B. (Ekstern), Spliid, N. (Ekstern), Spliid, H. (Intern)
Pages: 404-409
Publication date: 1998
Main Research Area: Technical/natural sciences
Variability in microbiological degradation experiments, analysis and case study
The variability of parameter estimates in microbiological degradation models has not received much attention in the literature. This in spite of the fact that the parameters are used in models for predicting and controlling microbiological processes of commercial interest. Furthermore, the accuracy of the parameter estimates are depending of the choice of estimation method, this fact has not either received much attention, all though an unsuitable estimation method can lead to estimates which are quite different from the "true" values. The present thesis describes various nonlinear estimation techniques and describes analysis techniques for testing the reproducibility of a given experiment. The parameter estimation method employed for the experiments in this study is based on an iterative maximum likelihood method and the test statistic is an approximated likelihood ratio test. The estimations were carried out by the nonlinear estimation program Dekimo (developed at IMM by Bilbo and Sommer), available on request. The program successfully fitted all experiments. A few estimations were also carried out by the Lineweaver-Burk linearization, but the estimated parameters fitted the data poorly due to the inappropriate estimation method. The examination of reproducibility/variability were carried out for two kinds of experiments: A single substrate experiment with toluene and a dual substrate experiment with toluene and benzene. A pure culture, isolated from soil, grew with benzene and/or toluene as the only carbon and energy source. The substrates were degraded in batches under aerobic conditions. The Monod model was employed to describe the biological processes in the single substrate system, and 'Bailey & Ollis' model was employed to describe the processes in the dual substrate system. In the single substrate system 9 identical experiments were performed on three different days, and in the dual substrate system 12 identical experiments were performed on four different days. The data are available on the address: http://www.imm.dtu.dk/documents/ftp/phdliste/phd31.abstract.html Experimental observations indicate that these microbiological degradation experiments have a limited reproducibility, i.e. that a common set of parameter estimates could not be employed to describe all experiments. However, experiments carried out on the same days (within runs) were more uniform than experiment carried out on different days (between runs). In the single substrate system a common sets of parameter estimates for experiments within runs fitted the data very well, whereas common sets of parameter estimates for experiments between runs fitted the data poorly and were moreover strongly rejected to be identical by the likelihood ratio test. In the dual substrate system a common set of parameter estimates could not be accepted nor within the runs neither between the runs. Never the less, experiments within the runs were more uniform compared to experiments carried out on different days (between the runs). The lag phases within runs were thus exactly the same, but were quite different from experiments from different runs. The limited reproducibility is probably caused by variability in the precultures, more precisely, variations in the activity level of the precultures just before used as inoculum. Facing the fact that these microbiological degradation experiments have a limited reproducibility one must in general expect large variability on the parameter estimates.

General information
State: Published
Organisations: DTU Data Analysis, Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Sommer, H. M. (Intern), Spliid, H. (Intern)
Number of pages: 211
Publication date: Sep 1997

Publication Information
Original language: English
Series: IMM-PHD-1997-31
Main Research Area: Technical/natural sciences
Electronic versions:
imm2440.pdf
Source: orbit
Source-ID: 200861
Publication: Research › Ph.D. thesis – Annual report year: 1997

Concentration-Dependant Changes of PCB Patterns in Fish-Eating Mammals.: Structural Evidence for Induction of Cytochrome P450.
Data sets on CB concentrations in fish-eating mammals from five laboratories were combined to test and refine a pharmacokinetic model. Clear differences in PCB patterns were observed between species. The ability to metabolize chlorobiphenyl (CB) congeners with vicinal H-atoms only in the ortho- and meta-positions and with one ortho-chlorine substituent generally increased in the order otter < cetaceans (harbor porpoise, common dolphin) < phocid seals (harbor and grey seal), but the metabolism of congeners with vicinal H-atoms in the meta- and para-positions and with two ortho-chlorines increased in the order cetaceans < seals < otter. Both categories of congeners are probably metabolized by different families of cytochrome P450 (1A and 2B) of which levels apparently differed between the cetaceans, the
pinnipeds, and the otter. Within-species CB patterns differed in a concentration-dependent manner. The induction of cytochrome P450 enzymes offers the most likely explanation for this phenomenon, but starvation could have a similar effect on occasion.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Royal Netherlands Institute for Sea Research - NIOZ, Ministry of Agriculture, Fisheries and Food, Institute of Marine Research, Free University, National Environmental Research Institute, Scottish Office of Agriculture, Environment, Fisheries and Food (SOAEFD)
Authors: Boon, J. (Ekstern), van der Meer, J. (Ekstern), Allchin, C. (Ekstern), Law, R. (Ekstern), Klungsoeyr, J. (Ekstern), Leonards, P. (Ekstern), Spliid, H. (Intern), Storr-Hansen, E. (Ekstern), Mckenzie, C. (Ekstern), Wells, D. (Ekstern)
Pages: 298-311
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Archives of Environmental Contamination and Toxicology
Volume: 33
Issue number: 3
ISSN (Print): 0090-4341
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): SJR 0.826 SNIP 0.95 CiteScore 2.36
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.846 SNIP 0.879 CiteScore 1.99
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.912 SNIP 1.126 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.984 SNIP 1.043 CiteScore 2.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.084 CiteScore 2.06
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.053 SNIP 1.006 CiteScore 2.04
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.993 SNIP 0.988
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.124 SNIP 0.975
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.159 SNIP 1.026
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.093 SNIP 0.958
Scopus rating (2006): SJR 1.026 SNIP 1.003
Scopus rating (2005): SJR 0.992 SNIP 1.053
Scopus rating (2004): SJR 1.416 SNIP 1.213
Scopus rating (2003): SJR 1.36 SNIP 1.335
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.126 SNIP 1.179
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.103 SNIP 1.152
Concentration dependent changes of PCB patterns in different species of fish eating mammals in relation to uptake from food and biotransformation capacity

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Boon, J. P. (Ekstern), Meer, J. V. D. (Ekstern), Spliid, H. (Intern)
Pages: 298-311
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Arch. Environ. Contam. Toxicol.
Volume: 33
ISSN (Print): 0090-4341
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): SJR 0.826 SNIP 0.95 CiteScore 2.36
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.846 SNIP 0.879 CiteScore 1.99
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.912 SNIP 1.126 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.984 SNIP 1.043 CiteScore 2.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.084 CiteScore 2.06
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.053 SNIP 1.006 CiteScore 2.04
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.993 SNIP 0.988
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.124 SNIP 0.975
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.159 SNIP 1.026
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.093 SNIP 0.958
Scopus rating (2006): SJR 1.026 SNIP 1.003
Scopus rating (2005): SJR 0.992 SNIP 1.053
Scopus rating (2004): SJR 1.416 SNIP 1.213
Scopus rating (2003): SJR 1.36 SNIP 1.335
Estimation in Stochastic Differential Equations with a State Dependent Diffusion Term: 11th IFAC Symposium on System Identification, Vol. 3

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Baadsgaard, M. T. (Intern), Nielsen, J. N. (Intern), Spliid, H. (Intern), Madsen, H. (Intern)
Pages: 1425-1430
Publication date: 1997

Host publication information
Title of host publication: 11th IFAC Symposium on System Identification, Vol. 3
Place of publication: Kitakyushu, Fukuoka
Main Research Area: Technical/natural sciences
Conference: 11th IFAC Symposium on System Identification (SYSID'97), Fukuoka, Japan, 07/07/1997 - 07/07/1997
Source: orbit
Source-ID: 168644
Publication: Research - peer-review › Article in proceedings – Annual report year: 1997


General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Soerensen, P. (Ekstern), Spliid, H. (Intern), Jensen, C. (Ekstern)
Pages: 200-205
Publication date: 1997

Host publication information
Place of publication: Copenhagen
Publisher: Munksgaard
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 169385
Publication: Research - peer-review › Book chapter – Annual report year: 1997

Statistisk Forsoegsplanlaegning.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Number of pages: 19
Publication date: 1997

Publication information
Original language: Danish
interpretation of regional variation of extreme values of point precipitation in Denmark

General information
State: Published
Organisations: Department of Environmental Science and Engineering, Department of Informatics and Mathematical Modeling
Authors: Arnberg-Nielsen, K. (Intern), Harremoës, P. (Intern), Spliid, H. (Intern)
Pages: 99-111
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Atmospheric Research
Volume: 42
Issue number: 1-4
ISSN (Print): 0169-8095
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): SJR 1.568 SNIP 1.657 CiteScore 3.93
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.65 SNIP 1.678 CiteScore 3.36
Lineær kalibrering og detektionsevne.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Number of pages: 12
Publication date: 1996

Modelling of tipping bucket gauges: single rain events and rain series

General information
State: Published
Organisations: Department of Environmental Science and Engineering, Department of Informatics and Mathematical Modeling
Ruggedness test for measuring procedures - An example.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Number of pages: 22
Publication date: 1996

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 165648
Publication: Research - peer-review › Report – Annual report year: 1996

Statistical design of experiments.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Number of pages: 14
Publication date: 1996

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 165673
Publication: Research - peer-review › Report – Annual report year: 1996

Modeling of Tipping Bucket Rain Gauges: Single Rain Events, Rain Series and Geographical Variation

General information
State: Published
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling
Authors: Arnbjerg-Nielsen, K. (Intern), El-Shaarawi, A. (Ekstern), Spliid, H. (Intern), Harremoës, P. (Intern)
Number of pages: 2
Publication date: 1995
Event: Abstract from 6th International Conference on Environmentrics, Kuala Lumpur, Malaysia.
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 1995

Nonlinear Parameter Estimation in Microbiological Degradation Systems and Statistic Test for Common Estimation

General information
State: Published
Non-linear parameter estimation in microbiologic degradation systems and statistic test for common estimation

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Department of Environmental Engineering
Authors: Sommer, H. M. (Ekstern), Holst, H. (Intern), Spliid, H. (Intern), Arvin, E. (Intern)
Pages: 551-556
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Environment International
Volume: 21
Issue number: 5
ISSN (Print): 0160-4120
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): CiteScore 7.33 SJR 2.465 SNIP 2.389
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.577 SNIP 2.129 CiteScore 6.49
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.714 SNIP 2.317 CiteScore 6.54
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.664 SNIP 2.209 CiteScore 6.06
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.193 SNIP 2.46 CiteScore 6.37
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.773 SNIP 2.346 CiteScore 5.43
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.55 SNIP 1.894
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.35 SNIP 2.07
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.861 SNIP 2.086
Patterns of chlorinated biphenyl congeners in harbor seals (Phoca vitulina) and in their food: Statistical analysis

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Storr-Hansen, E. (Ekstern), Spliid, H. (Intern), Boon, J. P. (Ekstern)
Pages: 48-54
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Arch. Environ. Contam. Toxicol.
Volume: 28
ISSN (Print): 0090-4341
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): SJR 0.826 SNIP 0.95 CiteScore 2.36
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.846 SNIP 0.879 CiteScore 1.99
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.912 SNIP 1.126 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.984 SNIP 1.043 CiteScore 2.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.084 CiteScore 2.06
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Properties of Extreme Rainfall Based on Measurements from Tipping Bucket Gauges

General information
State: Published
Organisations: Department of Environmental Science and Engineering, Department of Informatics and Mathematical Modeling, Mathematical Statistics, National Water Research Institute
Authors: Arnbjerg-Nielsen, K. (Intern), Harremoës, P. (Intern), El-Shaarawi, A. H. (Ekstern), Spliid, H. (Intern)
Publication date: 1995
Event: Poster session presented at Fifth International Conference on Precipitation, Elounda, Crete Greece.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 318682
Publication: Research - peer-review › Poster – Annual report year: 1995

Algal Toxicity Tests - Selection of Endpoints and Statistical Treatment of Results

General information
State: Published
Organisations: Department of Environmental Engineering, Mathematical Statistics, Department of Informatics and Mathematical Modeling, Technical University of Denmark
Authors: Nyholm, N. (Intern), Holst, H. (Ekstern), Spliid, H. (Intern), Andersen, H. (Ekstern)
Number of pages: 174
Pages: E03
Publication date: 1994

Host publication information
Title of host publication: Towards Sustainable Environmental Management
Place of publication: Brussels
Publisher: SETAC
Main Research Area: Technical/natural sciences
Examination of reproducibility in Microbiologic degradation experiments

General information
State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, Department of Informatics and Mathematical Modeling
Authors: Sommer, H. M. (Intern), Holst, H. (Ekstern), Spliid, H. (Intern)
Publication date: 1994

Host publication information
Title of host publication: Proceedings of the 5th International Conference on Statistical Methods for the Environmental Sciences
Main Research Area: Technical/natural sciences
Conference: The 5th International Conference on Statistical Methods for the Environmental Sciences, Burlington, Canada, 01/01/1994

Fluctuation analysis of mutations to nalidixic resistance in Escherichia coli

General information
State: Published
Organisations: Department of Microbiology, Center for Biomedical Microbiology, Department of Systems Biology, Mathematical Statistics, Department of Informatics and Mathematical Modeling, Biotechnological Institute
Authors: Boe, L. (Intern), Tolker-Nielsen, T. (Intern), Eegholm, K. M. (Ekstern), Spliid, H. (Intern), Vrang, A. (Intern)
Pages: 2781-2787
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Journal: J. Bacteriology
Volume: 176
ISSN (Print): 0021-9193
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 3.08 SJR 1.908 SNIP 0.884
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.151 SNIP 0.959 CiteScore 2.84
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.069 SNIP 0.937 CiteScore 2.72
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.136 SNIP 1.018 CiteScore 3
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.103 SNIP 1.092 CiteScore 3.42
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Non-Parametric Statistics on Extreme Rainfall

General information
State: Published
Organisations: Department of Environmental Science and Engineering, Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Arnbjerg-Nielsen, K. (Intern), Harremoës, P. (Intern), Spliid, H. (Intern)
Pages: 267-278
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Journal: Nordic Hydrology
Volume: 25
ISSN (Print): 0029-1277
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
The authors formulate a model for the analysis of designed biological growth experiments where a mixture of toxicants is applied to biological target organisms. The purpose of such experiments is to assess the toxicity of the mixture in comparison with the toxicity observed when the toxicants are applied individually to the organisms. The analysis is based on a random differential equation describing the growth of the organisms. This model yields a natural measure of interaction between toxicants and the hypothesis of independent action from a mixture of toxicants can be tested. The proposed model is applied on data from an experiment where inhibition of the growth of the bacteria Pseudomonas fluorescens caused by different mixtures of pentachlorophenol and aniline was studied.

Statistical analysis of joint toxicity in biological growth experiments
The authors formulate a model for the analysis of designed biological growth experiments where a mixture of toxicants is applied to biological target organisms. The purpose of such experiments is to assess the toxicity of the mixture in comparison with the toxicity observed when the toxicants are applied individually to the organisms. The analysis is based on a random differential equation describing the growth of the organisms. This model yields a natural measure of interaction between toxicants and the hypothesis of independent action from a mixture of toxicants can be tested. The proposed model is applied on data from an experiment where inhibition of the growth of the bacteria Pseudomonas fluorescens caused by different mixtures of pentachlorophenol and aniline was studied.

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern), Tørslev, J. (Ekstern)
Coplanar polychlorinated biphenyl congener levels and patterns and the identification of separate populations of harbour seals (Phoca Vitulina) in Denmark

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Storr-Hansen, E. (Ekstern), Spliid, H. (Intern)
Pages: 24-58
Publication date: 1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Arch. Environ. Contam. Toxicol.
Volume: 24
ISSN (Print): 0090-4341
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): SJR 0.826 SNIP 0.95 CiteScore 2.36
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.846 SNIP 0.879 CiteScore 1.99
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.912 SNIP 1.126 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.984 SNIP 1.043 CiteScore 2.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.084 CiteScore 2.06
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.053 SNIP 1.06 CiteScore 2.04
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.993 SNIP 0.988
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.124 SNIP 0.975
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.159 SNIP 1.026
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.093 SNIP 0.958
Scopus rating (2006): SJR 1.026 SNIP 1.003
Scopus rating (2005): SJR 0.992 SNIP 1.053
Scopus rating (2004): SJR 1.416 SNIP 1.213
Scopus rating (2003): SJR 1.36 SNIP 1.335
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.126 SNIP 1.179
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.103 SNIP 1.152
Distribution patterns of polychlorinated biphenyl congeners in harbour seal (phoca Vitulina) tissues

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Storr-Hansen, E. (Ekstern), Spliid, H. (Intern)
Pages: 328-345
Publication date: 1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Arch. Environ. Contam. Toxicol.
Volume: 25
ISSN (Print): 0090-4341
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): SJR 0.826 SNIP 0.95 CiteScore 2.36
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.846 SNIP 0.879 CiteScore 1.99
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.912 SNIP 1.126 CiteScore 2.13
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.984 SNIP 1.043 CiteScore 2.16
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.084 CiteScore 2.06
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.053 SNIP 1.006 CiteScore 2.04
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.993 SNIP 0.988
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.124 SNIP 0.975
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.159 SNIP 1.026
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.093 SNIP 0.958
Scopus rating (2006): SJR 1.026 SNIP 1.003
Scopus rating (2005): SJR 0.992 SNIP 1.053
Scopus rating (2004): SJR 1.416 SNIP 1.213
Non-linear parameter estimation in microbiologic degradation systems and statistic test for common estimation

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Department of Environmental Engineering
Authors: Sommer, H. M. (Intern), Holst, H. (Intern), Spliid, H. (Intern), Arvin, E. (Intern)
Publication date: 1993

Publication information
Publisher: Informatics and Mathematical Modelling, Technical University of Denmark, DTU
Original language: English
Main Research Area: Technical/natural sciences
Source-ID: 201038
Publication: Research - peer-review › Report – Annual report year: 1993

Induction of micronuclei in hemocytes of Mytilus edulis and statistical analysis

A genotoxicity test focusing on micronucleus production in the blood cells (hemocytes) of blue mussel M. edulis has been developed as a possible indicator for marine pollution. A linear dose-response relationship was found when M. edulis was exposed to low concentrations (0, 12.5, and 25 mg/liter) of the alkylating agent ethyl methanesulfonate under laboratory conditions, while higher concentrations (50 and 100 mg/liter) resulted in cytotoxic effects. Furthermore the micronuclei (MN) frequencies in wild mussels from four different field locations have been determined. Mussels collected from two polluted sites showed an elevated MN frequency, indicating the presence of genotoxic pollution. A method to determine the micronuclei background level is suggested and the further implications for applying the method in biomonitoring investigations are discussed. The considered M. edulis exhibits a high biological variation, emphasizing the importance of application of a correct statistical method. A systematic approach to the statistical evaluation of the mussel MN test is outlined. The statistical model includes three different situations: (a) estimation of parameters of a single sample, (b) estimation and comparison of two samples, and (c) estimation of a dose-response relationship. Cases (a) and (b) are especially relevant in biomonitoring investigations while case (c) primarily concerns laboratory experiments.
Modelling the growth of methane-oxidizing bacteria in a fixed biofilm

Methane-oxidizing bacteria were grown in a fixed biofilm reactor in order to study their ability to degrade chlorinated aliphatic hydrocarbons. Focus is on the growth behaviour of the mixed culture. The growth is described by a model that includes methanotrophic bacteria in the active biomass fraction. The inactive biomass fraction consists of exocellular polymers and biodegradable and inert particulate biomass. The model describes the oxygen respiration in detail. Yield coefficients, decay constants and hydrolysis constants are estimated based on the oxygen respiration. An analysis of the observability of the system reveals that several of the coefficients cannot be determined explicitly due to the complexity of the model and the limited amount of variables measured. Estimation procedures based on least squares methods are employed and parameter estimates and confidence intervals are computed. The study forms the basis for setting up a future measuring programme. This work indicates a yield coefficient for methanotrophs of 0.36 mg biomass COD per mg CH$_4$/ in weight units this corresponds to approx. 1.44 mg biomass per mg CH$_4$/ . This is close to the theoretical maximum growth yield for methanotrophs.

General information
State: Published
Organisations: Department of Environmental Engineering, Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Bilbo, C. M. (Ekstern), Arvin, E. (Intern), Holst, H. (Intern), Spliid, H. (Intern)
Pages: 301-309
Publication date: 1992
Main Research Area: Technical/natural sciences

Publication information
Journal: Water Research
Volume: 26
Issue number: 3
ISSN (Print): 0043-1354
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): CiteScore 7.49 SJR 2.629 SNIP 2.558
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.689 SNIP 2.507 CiteScore 6.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.957 SNIP 2.727 CiteScore 6.13
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.956 SNIP 2.693 CiteScore 6.02
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.966 SNIP 2.456 CiteScore 5.15
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.867 SNIP 2.374 CiteScore 5.43
A hypothesis of no interaction in factorial experiments with a binary response

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Thyregod, P. (Intern), Spliid, H. (Intern)
Pages: 197-209
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Scand. J. of Statistics
Volume: 18
ISSN (Print): 0303-6898
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 1.563 SNIP 1.319 CiteScore 1.14
A program for estimation of kinetic parameters in a biodegradation model and a systematic approach to the design of experiments

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Department of Environmental Engineering
Authors: Bilbo, C. M. (Ekstern), Spliid, H. (Intern), Arvin, E. (Intern), Holst, H. (Intern)
Publication date: 1991

Statistical control of hygienic quality of bathing water

General information
**Analysis of interactions in a multicomponent system**

**General information**
State: Published  
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Department of Environmental Engineering  
Authors: Bilbo, C. M. (Ekstern), Spliid, H. (Intern), Arvin, E. (Intern), Holst, H. (Intern)  
Publication date: 1990

**Publication information**
Publisher: Informatics and Mathematical Modelling, Technical University of Denmark, DTU  
Original language: English  
Main Research Area: Technical/natural sciences  
Source: orbit  
Source-ID: 200884  
Publication: Research - peer-review › Report – Annual report year: 1990

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**Statistical analysis of growth in biological systems**

**General information**
State: Published  
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling  
Authors: Bilbo, C. M. (Ekstern), Spliid, H. (Intern), Holst, H. (Intern)  
Publication date: 1990  
Event: Abstract from 2th International Conference on Statistical Methods for the Environmental Sciences and The First General Meeting of the Environ.  
Main Research Area: Technical/natural sciences  
Source: orbit  
Source-ID: 200539  
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 1990

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**Statistical analysis of growth in biological systems**

**General information**
State: Published  
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling  
Authors: Bilbo, C. M. (Ekstern), Spliid, H. (Intern), Holst, H. (Intern)  
Publication date: 1990

**Publication information**
Publisher: Informatics and Mathematical Modelling, Technical University of Denmark, DTU  
Original language: English  
Main Research Area: Technical/natural sciences  
Source: orbit  
Source-ID: 200885  
Publication: Research - peer-review › Report – Annual report year: 1990

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**Strategi for grundvandskontrol ved affaldsdeponier**

**General information**
State: Published  
Organisations: Department of Environmental Engineering, Department of Informatics and Mathematical Modeling  
Authors: La Cour Jansen, J. (Intern), Kjeldsen, P. (Intern), Kirkegaard, C. (Ekstern), Spliid, H. (Intern)  
Pages: 20-24  
Publication date: 1986  
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Vand og Miljø  
Volume: 1  
Original language: Danish  
Publication: Research › Journal article – Annual report year: 1986
Markov models in discrete and continuous time for hourly observations of cloud cover

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Madsen, H. (Intern), Spliid, H. (Intern), Thyregod, P. (Intern)
Publication date: 1985
Main Research Area: Technical/natural sciences

Publication information
Journal: J. of climate and applied climatology
Original language: English
Links:
http://www2.imm.dtu.dk/pubdb/p.php?4381
Source: orbit
Source-ID: 199714
Publication: Research - peer-review › Journal article – Annual report year: 1985

Prediction of high tides in the Baltic Sea, IMSOR research

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling, Image Analysis and Computer Graphics
Authors: Spliid, H. (Intern), Ersbøll, B. K. (Intern)
Number of pages: 30
Publication date: 1984

Host publication information
Title of host publication: ACEEE Conference Santa Cruz, California
Main Research Area: Technical/natural sciences
Conference: ACEEE Conference Santa Cruz, California, 01/01/1984
Source: orbit
Source-ID: 200388
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984

Tidsrækkeanalyse af vandstande fra Østersøen omkring Lolland-Falster

General information
State: Published
Organisations: Image Analysis and Computer Graphics, Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Ersbøll, B. K. (Intern), Spliid, H. (Intern)
Pages: 369-405
Publication date: 1984

Host publication information
Title of host publication: Symposium i Anvendt Statistik
Place of publication: Århus
Main Research Area: Technical/natural sciences
Conference: Århus, Denmark, 01/01/1984
Source: orbit
Source-ID: 200063
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984

A fast estimation method for the Vector autoregressive moving average model with exogenous variables

General information
State: Published
Organisations: Mathematical Statistics, Department of Informatics and Mathematical Modeling
Authors: Spliid, H. (Intern)
Pages: 843-849
Publication date: 1983
Main Research Area: Technical/natural sciences
A seasonal filter for use in Box Jenkins analysis of time series

General information
State: Published
Organisations: Image Analysis and Computer Graphics, Department of Informatics and Mathematical Modeling, Mathematical Statistics
Authors: Conradsen, K. (Intern), Spliid, H. (Intern)
Publication date: 1981
Main Research Area: Technical/natural sciences

Publication Information
Volume: 30
Issue number: 2
ISSN (Print): 0035-9254
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 1.407 SNIP 1.692 CiteScore 1.75
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.085 SNIP 1.18 CiteScore 1.5
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.394 SNIP 0.99 CiteScore 1.34
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.32 SNIP 1.149 CiteScore 1.61
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 0.989 SNIP 1.133 CiteScore 1.31
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.809 SNIP 0.946 CiteScore 1.07
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 0.663 SNIP 0.901
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.849 SNIP 0.865
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.63 SNIP 1.447
Scopus rating (2007): SJR 1.208 SNIP 1.329
Scopus rating (2006): SJR 1.172 SNIP 1.598
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.009 SNIP 1.566
Scopus rating (2004): SJR 1.694 SNIP 1.317
Projects:

**Multivariate Time Series Modelling of Australian Data on Deaths from Homicide and Suicides**

Department of Applied Mathematics and Computer Science

Statistics and Data Analysis

Period: 22/08/2016 → 01/01/2017

Number of participants: 2

Time Series Analysis, Multivariate, MARIMA, Australia

Supervisor:

Spliid, Henrik (Intern)

Main Supervisor:

Stockmarr, Anders (Intern)

**Statistisk modellering af antal trafikuheld i Danmark**

Department of Informatics and Mathematical Modeling

Period: 01/01/2000 → 16/02/2004

Number of participants: 5

Phd Student:

Christens, Peter (Intern)

Main Supervisor:

Thyregod, Poul (Intern)

Examiner:

Spliid, Henrik (Intern)

Elvik, Rune (Ekstern)

Wegman, Fred (Ekstern)

**Financing sources**

Source: Internal funding (public)

Name of research programme: Offentlig finansiering

Project: PhD

**Vedligeholds- og udskiftningsstrategier for komplekse systemer**

Department of Informatics and Mathematical Modeling

Period: 01/07/1998 → 28/05/2003

Number of participants: 6

Phd Student:

Pedersen, Thomas Espelund (Intern)

Supervisor:

Livbjerg, Steen (Ekstern)

Main Supervisor:

Thyregod, Poul (Intern)

Examiner:

Spliid, Henrik (Intern)

Bergman, Bo (Ekstern)
Lindqvist, Bo (Ekstern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: Ansat eksternt CAMP
Project: PhD

**Dynamic modelling of Energy Systems**
Department of Informatics and Mathematical Modeling
Period: 01/01/1998 → 03/12/2001
Number of participants: 5
Phd Student:
Andersen, Klaus Kaae (Intern)
Main Supervisor:
Madsen, Henrik (Intern)
Examiner:
Spliid, Henrik (Intern)
Bidstrup, Niels (Intern)
Lebrun, Jean (Ekstern)

**Financing sources**
Source: Internal funding (public)
Name of research programme: DTU-lønnet stipendie
Project: PhD

**Modellering og styring af sprøjtestøbeproces**

Department of Informatics and Mathematical Modeling
Novo Nordisk A/S
Period: 01/08/1997 → 31/07/2000
Number of participants: 3
Project participant:
Spliid, Henrik (Intern)
Thyregod, Peter (Intern)
Project Manager, organisational:
Madsen, Henrik (Intern)

**Financing sources**
Source: Unknown
Name of research programme: Ukendt
Amount: 30,645.00 Danish Kroner
Project

**Modellering og styring af sprøjtestøbeproces**
Department of Informatics and Mathematical Modeling
Period: 01/08/1997 → …
Number of participants: 7
Phd Student:
Thyregod, Peter (Intern)
Supervisor:
Melgaard, Henrik (Intern)
Spliid, Henrik (Intern)
Main Supervisor:
Madsen, Henrik (Intern)
Examiner:
Rootzén, Helle (Intern)
Bisgaard, Søren (Ekstern)
Olsen, Klaus Juel (Ekstern)

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

Kombineret fysik og statistisk on-line forudsigelse af produktion fra vindmølleparker

Department of Informatics and Mathematical Modeling
Period: 01/04/1997 → 20/05/2003
Number of participants: 6
Phd Student:
Joensen, Alfred K. (Intern)
Supervisor:
Landberg, Lars (Intern)
Main Supervisor:
Madsen, Henrik (Intern)
Examiner:
Spliid, Henrik (Intern)
Knudsen, Torben (Ekstern)
Larsen, Søren Ejling (Intern)

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

Consistency in Statistical Toxicity Testing
Ph.D. Project no. 1214 Financier: ATV Ph.D. Student: Helle Andersen Development of models for consistent statistical methods in toxicity testing in pre-clinical experiments in the pararmaceutical industry. The work is aiming at the construction of a knowledge database containing information about selection of mathematical models and for example possible transformations, outlier tests and other statistical procedures for given types of studies.

Department of Informatics and Mathematical Modeling
Period: 01/11/1996 → 30/10/1999
Number of participants: 2
Project participant:
Andersen, Helle (Intern)
Project Manager, organisational:
Spliid, Henrik (Intern)

Statistiske metoder og modeller til analyse

Department of Informatics and Mathematical Modeling
Period: 01/11/1996 → …
Number of participants: 2
Phd Student:
Andersen, Helle (Intern)
Main Supervisor:
Spliid, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Erhvervsforskerordningen
Project: PhD
Stochastic modelling of high-resolution rainfall time series
Two approaches to generate artificial high-resolution rain series for use as input to simulation of urban drainage systems have been tested, both based on waiting times between consecutive tips of tipping bucket gauges calibrated to sample rain in a 0.2 mm depth resolution. ARIMA-models give a reasonable description of data but they have found limited practical use due to difficulties with identification, estimation and simulation of individual extreme rain events. Markov chain models including a state variable representing accumulated rain depth are able to extract the statistical properties of the data series and may be used to generate artificial rain series that resemble the original data structure. The perspective is to couple a stochastic time series model with a regional model for extreme point rainfall in order to make inference about extreme rainfall at ungauged locations.

Department of Environmental Science and Engineering
Department of Informatics and Mathematical Modeling
Period: 01/08/1996 → 30/06/1999
Number of participants: 4
Project participant:
Ambjerg-Nielsen, Karsten (Intern)
Mikkelsen, Peter Steen (Intern)
Spliid, Henrik (Intern)

Project Manager, organisational:
Harremoës, Poul (Intern)

Financing sources
Source: Unknown
Name of research programme: Ukendt
Amount: 150,000.00 Danish Kroner

Statistiske metoder til vurdering af kontrol af kemiske referencematerialer
Department of Informatics and Mathematical Modeling
Period: 01/09/1995 → …
Number of participants: 4
Phd Student:
Schramm-Nielsen, Karina Edith (Intern)
Supervisor:
Hansen, Elo Harald (Intern)
Main Supervisor:
Spliid, Henrik (Intern)
Examiner:
Vølund, Aage (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: DTU-Su Stipendium, Eksperiment
Project: PhD

Anvendelse af stokastiske differential ligninger i biometri.
De klassiske modeller for biologisk nedbrydning af stoffer antager et forloeb, der foelger en eller flere sammenhoerende differentialligninger med faste og tidsuafhaengige koeficienter. I praksis ses imidlertid et forloeb, der nok er kontinueret, men mere tilfaeldigt og desuden er overlejret med maalestoej. Projektets formaal er saaledes at beskrive de tilfaeldige variationer i nedbrydningsforloebet ved hjælp af stokastiske differentialligninger samt at identificere maalestoejen.

Department of Informatics and Mathematical Modeling
Period: 01/01/1995 → 31/12/1999
Number of participants: 3
Project participant:
Spliid, Henrik (Intern)
Wang, Chunyan (Ekstern)

Project Manager, organisational:
Rootzén, Helle (Intern)
**Project**

**Biologisk vækst i multikomponentsystemer.**

Der betragtes multikomponentsystemer af organiske stoffer, hvor de enkelte stoffer kan nedbrydes af en eller flere grupper af mikroorganismer. Der skal saaledes opstilles en model der beskriver omsætningen af stoffer. Ligningssystemets strukturelle karakter antages at være kendt og problemet bestaar saaledes i at estimere de ukendte parametre, der indgår i differentialligningerne. Desuden behandles problemer vedr. observerbarhed. Konkret er formålet at bedre forståelsen af de grundlæggende biologiske og reaktionskinetiske forhold, der bestemmer omsætningen af mono aromatiske hydrocarboner (MAH) i grundvand, saaledes at det skabes basis for en biologisk baseret oprensningsteknik for MAH-forurenet grundvand.

Department of Informatics and Mathematical Modeling
Department of Environmental Science and Engineering

**Concentration-Dependent changes of PCB Patterns in Fish-Eating Mammals**

Data on chlorobiphenyls (CB's) in fish-eating mammals from five laboratories are combined to test and refine a pharmacokinetic model for the capacity of marine mammals to metabolize CB's. The study covers data on otter, harbour porpoise, common dolphin, harbour and grey seal. The marine mammal samples originated from the coasts of the British Isles, the Netherlands and Denmark. Otter samples originated from The Netherlands, Denmark, Austria and the Czech Republic. The main purpose of the project has been to relate observed differences in CB patterns between species to differences in biotransformation capacity. Publ.: Arch. Environ. Contam. Toxicol. 33, 298-311 (1997).

Department of Informatics and Mathematical Modeling
Royal Netherlands Institute for Sea Research - NIOZ

**Faktorforsoeg med funktionelt respons.**


Department of Informatics and Mathematical Modeling

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**Project participant:** Spliid, Henrik (Intern)
Sommer, Helle Mølgaard (Intern)
Arvin, Erik (Intern)
Rootzén, Helle (Intern)

**Project Manager, organisational:**

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**Project participant:** Boon, Jan (Ekstern)
van der Meer, Jaap (Ekstern)
Storr-Hansen, Eva (Ekstern)

**Project Manager, organisational:** Spliid, Henrik (Intern)

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**Project participant:** Spliid, Henrik (Intern)
Sommer, Helle Mølgaard (Intern)

**Project Manager, organisational:**
European Centre for mathematics and technology of urban water pollution.

Department of Environmental Engineering
Department of Environmental Science and Engineering
Department of Informatics and Mathematical Modeling

Period: 01/01/1994 → 31/12/1998
Number of participants: 18
Project participant:
Warnaars, Eric (Intern)
Spliid, Henrik (Intern)
Hvidtved-Jacobsen, Thorkild (Ekstern)
Aalderink, Hans (Ekstern)
Matos, Maria R. (Ekstern)
Andreadakis, Andreas (Ekstern)
Butler, David (Ekstern)
Dupont, Rene (Ekstern)
Dørge, Jesper (Ekstern)
Heras, Jaime G. (Ekstern)
Gujer, Willi (Ekstern)
Nelen, Fons (Ekstern)
Pinto, Appio di (Ekstern)
RevittRevitt, Mike (Ekstern)
Svensson, Gilbert (Ekstern)
Tyson, John (Ekstern)
Verworn, Hans R. (Ekstern)

Project Manager, organisational:
Harremoës, Poul (Intern)

Financing sources
Source: Unknown
Name of research programme: Ukendt
Amount: 3,045,000.00 Danish Kroner

Stochastic Differential Equations and Biological System

Department of Informatics and Mathematical Modeling

Period: 01/06/1992 → 17/03/1995
Number of participants: 3
Phd Student:
Wang, Chunyan (Intern)
Main Supervisor:
Spliid, Henrik (Intern)
Examiner:
Vølund, Aage (Ekstern)

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

Variability in Microbiological Degradation Experoment - Analysis and Case Study

Department of Informatics and Mathematical Modeling
Period: 01/04/1992 → 30/09/1997
Number of participants: 2
Phd Student:
Sommer, Helle Mølgaard (Intern)
Main Supervisor:
Spliid, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Centerfinansieret

Udvikling og optimering af kemiske processer under anvendelse af statistiske korrelationsmetoder
Department of Informatics and Mathematical Modeling
Period: 01/09/1987 → 25/04/1995
Number of participants: 2
Phd Student:
Ersbøll, Annette Kjær (Intern)
Main Supervisor:
Spliid, Henrik (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Gammel ordning u/skema-SU

Activities:

Multivariate Time Series Estimation using marima
Period: 26 Jan 2016
Henrik Spliid (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event
38. Symposium i Anvendt Statistik 2016
25/01/2016 → 27/01/2016
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations