Murat Kulahci - DTU Orbit (01/01/2018)
Kulahci, Murat
muku@dtu.dk
Department of Applied Mathematics and Computer Science - Associate Professor
Statistics and Data Analysis

Publications:

Exploring the Use of Design of Experiments in Industrial Processes Operating Under Closed-Loop Control: Experimentation in closed-loop systems
Publication: Research - peer-review › Journal article – Annual report year: 2017

Managerial implications for improving continuous production processes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

On the structure of dynamic principal component analysis used in statistical process monitoring
Publication: Research - peer-review › Journal article – Annual report year: 2017

Scenario-Neutral Simulation of Flood Risk for Multiple Drivers
Löwe, R., Urich, C., Kulahci, M., Radhakrishnan, M., Deletic, A. & Arnbjerg-Nielsen, K. 2017
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Selecting local constraint for alignment of batch process data with dynamic time warping
Publication: Research - peer-review › Journal article – Annual report year: 2017

Selection of non-zero loadings in sparse principal component analysis
Gajjar, S., Kulahci, M. & Palazoglu, A. 2017 In : Chemometrics and Intelligent Laboratory Systems. 162, p. 160-171
Publication: Research - peer-review › Journal article – Annual report year: 2017

Setup for Scenario-free Modelling of Urban Flood Risk in Non-stationary Climate and Urban Development Conditions
Löwe, R., Urich, C., Kulahci, M., Radhakrishnan, M., Deletic, A. & Arnbjerg-Nielsen, K. 2017
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Trellis plots as visual aids for analyzing split plot experiments
Kulahci, M. & Menon, A. 2017 In : Quality Engineering. 29, 2, p. 211-225
Publication: Research - peer-review › Journal article – Annual report year: 2017

Monitoring Animal Well-being
Publication: Research › Ph.D. thesis – Annual report year: 2016

Monitoring pig movement at the slaughterhouse using optical flow and modified angular histograms
Publication: Research - peer-review › Journal article – Annual report year: 2016

Process Knowledge Discovery Using Sparse Principal Component Analysis
Split-plot designs for multistage experimentation
Publication: Research - peer-review › Journal article – Annual report year: 2016

Use of Sparse Principal Component Analysis (SPCA) for Fault Detection
Publication: Research - peer-review › Conference article – Annual report year: 2017

Design and analysis of biomedical studies
Publication: Research › Ph.D. thesis – Annual report year: 2015

Design of Experiments for Food Engineering
Pedersen, S. J., Frosch, S., Kulahci, M. & Geoffrey Vining, G. 2015 Søborg: National Food Institute, Technical University of Denmark. 133 p.
Publication: Research › Ph.D. thesis – Annual report year: 2016

Experiments for Multi-Stage Processes
Tyssedal, J. & Kulahci, M. 2015 In : Quality Technology and Quantitative Management. 12, 1, p. 13-28
Publication: Research - peer-review › Journal article – Annual report year: 2015

iCFD: Interpreted Computational Fluid Dynamics – Degeneration of CFD to one-dimensional advection-dispersion models using statistical experimental design – The secondary clarifier
Publication: Research - peer-review › Journal article – Annual report year: 2015

iCFD modeling of final settlers - developing consistent and effective simulation model structures
Plósz, B. G., Guyonvarch, E., Ramin, E. & Kulahci, M. 2015
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Impact of Autocorrelation on Principal Components and Their Use in Statistical Process Control
Publication: Research - peer-review › Journal article – Annual report year: 2015

Pig herd monitoring and undesirable tripping and stepping prevention
Publication: Research - peer-review › Journal article – Annual report year: 2015

Recent Advances and Future Directions for Quality Engineering
Publication: Research - peer-review › Journal article – Annual report year: 2015

Statistical Data Mining for Efficient Quality Control in Manufacturing
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

The Effect of Autocorrelation on the Hotelling T-2 Control Chart
Publication: Research - peer-review › Journal article – Annual report year: 2015
Discussion of “The Statistical Evaluation of Categorical Measurements: `Simple Scales, but Treacherous Complexity Underneath’”
Kulahci, M. 2014 In : Quality Engineering. 26, 1, p. 40-43
Publication: Research - peer-review › Review – Annual report year: 2015

Editorial - a Special Issue on Data Mining
Publication: Research › Editorial – Annual report year: 2014

In vivo Comet assay – statistical analysis and power calculations of mice testicular cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Study Delay
Publication: Research › Report – Annual report year: 2014

The type I error rate for in vivo Comet assay data when the hierarchical structure is disregarded
Publication: Research › Report – Annual report year: 2014

A New Paradigm in Mortgage Loan Advice
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Class 4 Defects
Publication: Research › Report – Annual report year: 2013

Data Mining—A Special Issue of Quality and Reliability Engineering International (QREI)
Publication: Research - peer-review › Editorial – Annual report year: 2013

Improvement of the ΔσH Model
Publication: Research › Report – Annual report year: 2013

Monitoring Motion of Pigs in Thermal Videos
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Multivariate Statistical Process Control
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013
A Comparison of Decision Methods for Cpk When Data are Autocorrelated
Publication: Research - peer-review › Journal article – Annual report year: 2012

A Comparison of Decision Procedures for Cpk when Data are Autocorrelated
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Designing fractional factorial split-plot experiments using integer programming
Publication: Research - peer-review › Journal article – Annual report year: 2011

Designing simulation experiments with controllable and uncontrollable factors for applications in healthcare
Publication: Research - peer-review › Journal article – Annual report year: 2011

Hotelling’s T2 – An Introduction to Theory and Applications
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Multivariate Process Control with Autocorrelated Data
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Split-Plot Designs with Mirror Image Pairs as Subplots
Tyssedal, J., Kulahci, M. & Bisgaard, S. 2011 In : Journal of Statistical Planning and Inference. 141, 12, p. 3686-3696
Publication: Research - peer-review › Journal article – Annual report year: 2011

Steepest-Ascent Constrained Simultaneous Perturbation for Multiobjective Optimization
McClary, D., Syrotiuk, V. & Kulahci, M. 2011 In : A C M Transactions on Modeling and Computer Simulation. 21, 1, p. 2
Publication: Research - peer-review › Journal article – Annual report year: 2010

Time Series Analysis and Forecasting by Example
Publication: Research - peer-review › Book – Annual report year: 2011

Design of Computer Experiments
Publication: Research › Ph.D. thesis – Annual report year: 2010

Analysis of Computer Experiments with Multiple Noise Sources
Publication: Research - peer-review › Conference article – Annual report year: 2010

Analysis of Signal-Response Systems Using GLMM
Publication: Research - peer-review › Journal article – Annual report year: 2010

Conditional Value at Risk as a Measure for Waiting Time in Simulations of Hospital Units
Publication: Research - peer-review › Journal article – Annual report year: 2010
Kriging in computer experiments
Publication: Research - peer-review › Journal article – Annual report year: 2010

Profile-driven regression for modeling and runtime optimization of mobile networks
McClary, D., Syrotiuk, V. & Kulahci, M. 2010 In : ACM Transactions on Modeling and Computer Simulation. 20, 3
Publication: Research - peer-review › Journal article – Annual report year: 2010

Accelerated Design Space Search for Physical Simulations Using Computer Experiments
Kulahci, M. 2009
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

Checking the Adequacy of Fit of Models from Split-Plot Designs
Publication: Research - peer-review › Journal article – Annual report year: 2009

Design and Analysis of Simulation Experiments
Dehlendorff, C., Kulahci, M. & Andersen, K. K. 2009
Publication: Research › Conference abstract for conference – Annual report year: 2009

Designing Simulation Experiments with Controllable and Uncontrollable Factors
Dehlendorff, C., Kulahci, M. & Andersen, K. K. 2009
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

Generating Blocked Fractional Factorial Split-Plot Designs Using Integer Programming
Capehart, S., Kulahci, M. & Montgomery, D. 2009
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

Quality Quandaries- Time Series Model Selection and Parsimony
Bisgaard, S. & Kulahci, M. 2009 In : Quality Engineering. 21, 3, p. 341-353
Publication: Research - peer-review › Journal article – Annual report year: 2009

Simulation Based Cycle Time Quantile Estimation in Manufacturing Settings Employing Non-FIFO Dispatching Policies
Publication: Research - peer-review › Journal article – Annual report year: 2009

Advanced Statistical Process Control
Publication: Research - peer-review › Book chapter – Annual report year: 2008

A framework for reactive optimization in mobile ad hoc networks
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

A model-free approach to eliminate autocorrelation when testing for process capability
Vanmann, K. & Kulahci, M. 2008 In : Quality and Reliability Engineering International. 24, 2, p. 213-228
Publication: Research - peer-review › Journal article – Annual report year: 2008

Box-Cox Transformations and Time Series Modeling – Part 1
Publication: Research - peer-review › Journal article – Annual report year: 2008
Box-Cox Transformations and Time Series Modeling – Part 2
Publication: Research - peer-review › Journal article – Annual report year: 2008

Demand signal modelling: a short-range panel forecasting algorithm for semiconductor firm device-level demand
Publication: Research - peer-review › Journal article – Annual report year: 2008

Designing Simulation Experiments with Controllable and Uncontrollable Factors
Dehlendorff, C., Kulahci, M. & Andersen, K. K. 2008
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2008

Designing Simulation Experiments with Controllable and Uncontrollable Factors
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Estimation of Missing Observations in Two-Level Split-Plot Designs
Publication: Research - peer-review › Journal article – Annual report year: 2008

Follow-up Designs to Resolve Confounding in Split-Plot Experiments
Publication: Research - peer-review › Journal article – Annual report year: 2008

Fractional Factorial Designs for Multi-Step Processes
Ramirez, J., Kulahci, M. & Tobias, R. 2008
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2008

Introduction to Time Series Analysis and Forecasting
Publication: Research - peer-review › Book – Annual report year: 2008

Quality Quandaries: Forecasting with Seasonal Time Series Models
Publication: Research - peer-review › Journal article – Annual report year: 2008

Quality Quandaries: Using a Time Series Model for Process Adjustment and Control
Publication: Research - peer-review › Journal article – Annual report year: 2008

Simulation and Optimization of an Orthopaedic Surgical Unit
Dehlendorff, C., Merser, S., Kulahci, M. & Andersen, K. K. 2008
Publication: Research › Poster – Annual report year: 2008

Simulation Experimentation in Health Care Applications
Dehlendorff, C., Kulahci, M. & Andersen, K. K. 2008
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2008

Statistical Modeling of On-Time Delivery of Semiconductors Encompassing Variability of Yield and Cycle Time
Publication: Research - peer-review › Journal article – Annual report year: 2008
Truncated D-optimal Designs for Screening Experiments
Publication: Research - peer-review › Journal article – Annual report year: 2008

Accelerated Testing for On-Board Diagnostics
Publication: Research - peer-review › Journal article – Annual report year: 2007

Blocking Factorial Experiments
Kulahci, M. 2007 In : Quality and Reliability Engineering International. 23, p. 283-289
Publication: Research - peer-review › Journal article – Annual report year: 2007

Combining Latin Hypercube Designs and Discrete Event Simulation in a Study of a Surgical Unit
Dehlendorff, C., Andersen, K. K. & Kulahci, M. 2007
Publication: Research › Poster – Annual report year: 2007

Designing Two-level Split-plot Experiments
Kulahci, M. 2007
Publication: Research › Sound/Visual production (digital) – Annual report year: 2007

Designing Two-Level Split-Plot Experiments
Kulahci, M. 2007 Quality & Productivity Research Conference, Santa Fe, New Mexico, 4-6 June, 2007.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Meta-Regression: A Framework for Robust Reactive Optimization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

Partial confounding and projective properties of Plackett-Burman designs
Publication: Research - peer-review › Journal article – Annual report year: 2007

Quality Quandaries: Practical Time Series Modeling I
Publication: Research - peer-review › Journal article – Annual report year: 2007

Quality Quandaries: Practical Time Series Modeling II
Bisgaard, S. & Kulahci, M. 2007 In : Quality Engineering. 19, 4, p. 393-400
Publication: Research - peer-review › Journal article – Annual report year: 2007

Quality Quandaries: Beware of the Effect of Autocorrelation in Regression
Publication: Research - peer-review › Journal article – Annual report year: 2007

Quality Quandaries: Process Regime Changes
Publication: Research - peer-review › Journal article – Annual report year: 2007

Split-plot Experiments with Unusual Numbers of Subplot Runs
Publication: Research - peer-review › Journal article – Annual report year: 2007
A Generalization of the Alias Matrix
Publication: Research - peer-review › Journal article – Annual report year: 2006

An Overview of Short-term Statistical Forecasting Methods
Publication: Research - peer-review › Journal article – Annual report year: 2006

Challenges in Multivariate Control Charts with Autocorrelated Data
Publication: Research - peer-review › Article in proceedings – Annual report year: 2006

Quality Quandaries: Studying Input Output Relationships I
Publication: Research - peer-review › Journal article – Annual report year: 2006

Quality Quandaries: Studying Input Output Relationships II
Bisgaard, S. & Kulahci, M. 2006 In : Quality Engineering. 18, 3, p. 405-410
Publication: Research - peer-review › Journal article – Annual report year: 2006

Split-plot fractional designs: Is minimum aberration enough?
Kulahci, M., Ramirez, J. & Tobias, R. 2006 In : Journal of Quality Technology. 38, 1, p. 56-64
Publication: Research - peer-review › Journal article – Annual report year: 2006

The Partial Confounding and the Projection Properties of Plackett and Burman Designs
Publication: Research - peer-review › Journal article – Annual report year: 2006

Analysis of Split-Plot Designs with Economical Run Sizes
Tyssedal, J. & Kulahci, M. 2005 In : Journal of Quality and Reliability Engineering International. 21, 5, p. 539-551
Publication: Research - peer-review › Journal article – Annual report year: 2005

Checking Process Stability with the Variogram
Publication: Research - peer-review › Journal article – Annual report year: 2005

Follow-up Designs to Resolve Confounding in Split-Plot Experiments
Publication: Research › Article in proceedings – Annual report year: 2005

How to Handle Autocorrelation in Capability Analysis
Publication: Research › Article in proceedings – Annual report year: 2005

Interpretation of Time Series Models
Bisgaard, S. & Kulahci, M. 2005 In : Quality Engineering. 17, 4, p. 653-658
Publication: Research - peer-review › Journal article – Annual report year: 2005

The Effect of Autocorrelation on Statistical Process Control Procedures
Publication: Research - peer-review › Journal article – Annual report year: 2005
The Use of Plackett and Burman Designs to Construct Split-Plot Designs
Publication: Research - peer-review › Journal article – Annual report year: 2005

Towards Understanding Factor Dynamics
Vadde, K. K., Syrotiuk, V. R. & Kulahci, M. 2005 2nd IEEE International Workshop on Adaptive Wireless Networks (AWIN), St. Louis, Missouri.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2005

Analysis of Split-Plot Designs with Mirror Image Pairs as Subplots
Publication: Research › Article in proceedings – Annual report year: 2004

Modeling Strategy for Multidimensional Non-linear Problems
Publication: Research › Article in proceedings – Annual report year: 2004

Sensitivity of Tennis Players to Racquet Characteristics
Wiezel, A. & Kulahci, M. 2004 5th Engineering of Sport Conference, UC-Davis, California-USA.
Publication: Research - peer-review › Article in proceedings – Annual report year: 2004

Catalysis of Discovery and Development in Engineering and Industry
Publication: Research - peer-review › Journal article – Annual report year: 2003

Publication: Research - peer-review › Journal article – Annual report year: 2003

Fractionation of Two-level Designs for Multi-Step Processes (Preserving the Split-Plot Structure)
Publication: Research › Article in proceedings – Annual report year: 2003

Publication: Research - peer-review › Journal article – Annual report year: 2003

Improving and Controlling Business Processes
Publication: Research - peer-review › Journal article – Annual report year: 2002

The Application of Plackett and Burman Designs to Split Plot Experiments
Publication: Research › Article in proceedings – Annual report year: 2002

Understanding Plackett and Burman Designs
Kulahci, M. & Bisgaard, S. 2002 European Network for Business and Industrial Statistics Conference, Rimini-Italy.
Publication: Research › Article in proceedings – Annual report year: 2002

Robust Product Design: Saving Trials with Split Plot Confounding
Bisgaard, S. & Kulahci, M. 2001 In : Quality Engineering. 13, 3, p. 525-530
Publication: Research - peer-review › Journal article – Annual report year: 2001
Switching-One-Column Follow-up Experiments for Plackett-Burman Designs
Publication: Research - peer-review › Journal article – Annual report year: 2001

A New Approximation for the Average Run Length of a Cusum
Publication: Research › Article in proceedings – Annual report year: 2000

Finding Assignable Causes
Publication: Research - peer-review › Journal article – Annual report year: 2000

Projects:

Data analysis methods for process understanding and improvement in injection moulding production
Frumosu, F. D., Kulahci, M., Aanaes, H. & Tosello, G.
01/10/2016 → 30/09/2019
Project: PhD

Advancing linear and non-linear mixed models in engineering science
Jensen, S. P., Brockhoff, P. B., Kristensen, K. & Kulahci, M.
01/09/2015 → 31/08/2018
Project: PhD

Robust biomarkers for detection of cancer
Freiftoft, A. R. O., Kulahci, M., Dehlendorff, C. & Stenvang, J.
04/08/2015 → 15/08/2015
Project: PhD

Methods and tools for the statistical data analysis for large datasets collected from bio-based manufacturing processes
Spooner, M. P., Kulahci, M., Clemmensen, L. K. H. & Ersbøll, B. K.
01/06/2015 → 31/05/2018
Project: PhD

Intelligent Quality Assessment of Railway Switches and Crossings
01/03/2015 → 28/02/2019
Project

Characterization of absorption enhancers for orally administered therapeutic peptides in tablet formulations - applying statistical learning
01/05/2013 → 30/09/2016
Project: PhD

Engineering Strategies for improving the convenience food production- industry Case
Pedersen, S. J., Froesch, S., Kulahci, M., Vining, G. G., Jørgensen, B. M., Christensen, L. B. & Vanhatalo, E.
15/11/2012 → 21/04/2016
Project: PhD
Monitoring Animal Wellbeing
Gronskyte, R., Kulahci, M., Clemmensen, L. K. H., Hvid, M. S., Ersbøll, B. K., Bergquist, B. & Christensen, L. B.
15/12/2011 → 31/03/2016
Project: PhD

Modeling and Forecasting for Optimal Participation of Renewable Energy in Deregulated Energy Markets
Jónsson, T., Pinson, P., Nielsen, T. S., Poulsen, N. K., Kulahci, M., McSharry, P. E. & Meibom, P.
01/11/2008 → 24/08/2012
Project: PhD

Statistical design and analysis of animal experiments
Hansen, M. K., Kulahci, M., Brockhoff, P. B., Dehlendorff, C. & Vining, G. G.
15/09/2008 → 25/09/2014
Project: PhD

Analysis and Modelling of Chain Data
Kotwa, E. K., Brockhoff, P. B., Kulahci, M., Rinnan, Å. & Westad, F. O.
01/10/2007 → 05/09/2014
Project: PhD

Design of computer experiments
Dehlendorff, C., Andersen, K. K., Kulahci, M., Nielsen, B. F., Lophaven, S. N. & Tyssedal, J.
01/03/2007 → 08/12/2010
Project: PhD

Proceskapabilitet fra et industrielt perspektiv
Windfeldt, G. B., Rootzén, H., Hartvig, N. V., Kulahci, M., Castagliola, P. & Thyregod, P.
01/10/2005 → 30/09/2010
Project: PhD

Activities:

Introduction to Applied Statistics with R for PhD Students
Stockmarr, A. (Lecturer), Ersbøll, B. K. (Lecturer), Andersen, E. W. (Guest lecturer), Kulahci, M. (Lecturer), Baum, A. (Lecturer), Thyregod, C. (Other), Andersen, J. F. (Other)
9 Jun 2017 → 30 Jun 2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities