Personal profile

Maria Vlasiou is a Full Professor at the University of Twente, The Netherlands, an Associate Professor at the Eindhoven University of Technology (TU/e), and a Research Fellow of the European research institute EURANDOM. Her research centres on the performance of stochastic processing networks with layered architectures, focusing on energy networks, high-tech manufacturing, and stochastic performance analysis. Other interests include Lévy processes, perturbation analysis for heavy-tailed risk models, large deviations for non-monotone stochastic recursions, and proportional fairness in heavy traffic for bandwidth-sharing networks. She has supervised nine PhD theses on these topics.

Her research has been funded by grants exceeding 4.5M from more than 10 science foundations, universities, societies, and organisations. She is the co-author of more than 45 refereed papers, the co-recipient of the best paper award in ICORES 2013, the Marcel Neuts student paper award in MAM8, and of the 3rd prize of the 8th conference in Actuarial Science.

Prof. Vlasiou is associate editor in four journals and has refereed for about 50 international journals, conferences, and national science foundations. She serves as the representative of the Netherlands at the IMU Committee for Women in Mathematics and at the European Women in Mathematics association. She is additionally in the advisory boards of the national associations of women in mathematics in Cyprus and in Greece.

Research outputs

2024

ASIP tandem queues with consumption
Yeger, Y., Bozma, O., Resing, J. & Vlasiou, M., Jan 2024, In: Performance evaluation. 163, 102380.

2023

Tail asymptotics for the delay in a Brownian fork-join queue
Schol, D., Vlasiou, M. & Zwart, B., Oct 2023, In: Stochastic processes and their applications. 164, p. 99-138 40 p.

Asymptotic analysis of Emden–Fowler type equation with an application to power flow models: Special Issue dedicated to the memory of J.W. Cohen
Christianen, M. H. M., Janssen, A. J. E. M., Vlasiou, M. & Zwart, B., 1 Sept 2023, In: Indagationes mathematicae. 34, 5, p. 1146-1180 35 p.

Estimating Risk-aware Flexibility Areas for Electric Vehicle Charging Pools via AC Stochastic Optimal Power Flow
Giraldo, J. S., Arias, N. B., Vergara, P. P., Vlasiou, M., Hoogsteen, G. & Hurink, J. L., 1 Jul 2023, In: Journal of Modern Power Systems and Clean Energy. 11, 4, p. 1247-1256 10 p.

Comparison of stability regions for a line distribution network with stochastic load demands
Christianen, M. H. M., Cruise, J., Janssen, A. J. E. M., Shneer, S., Vlasiou, M. & Zwart, B., Apr 2023, In: Queueing systems. 103, 3-4, p. 187-239 53 p.

Simulation Study for the Comparison of Power Flow Models for a Line Distribution Network with Stochastic Load Demands
Christianen, M., Vlasiou, M. & Zwart, B., 2023, ICORES 2023 - Proceedings of the 12th International Conference on Operations Research and Enterprise Systems. Liberatori, F., Wesolkowski, S. & Parlier, G. H. (eds.). SCITEPRESS, p. 167-174 8 p. (International Conference on Operations Research and Enterprise Systems).
A Fluid Model of an Electric Vehicle Charging Network
Aveklouris, A., Vlasiou, M. & Zwart, B., Jun 2022, In: Stochastic systems. 12, 2, p. 151-180 30 p.

Large Fork-Join Queues with Nearly Deterministic Arrival and Service Times
Schol, D., Vlasiou, M. & Zwart, B., May 2022, In: Mathematics of operations research. 47, 2, p. 1335-1364 30 p.

Queues on interacting networks
Vlasiou, M., 4 Apr 2022, In: Queueing systems. 100, 3-4, p. 553-555 3 p.

Complete resource pooling of a load-balancing policy for a network of battery swapping stations
Sloothaak, F., Cruise, J., Shneer, S., Vlasiou, M. & Zwart, B., Oct 2021, In: Queueing systems. 99, 1-2, p. 65-120 56 p.

Speed of convergence to the quasi-stationary distribution for Lévy input fluid queues
Palmowski, Z. & Vlasiou, M., Oct 2020, In: Queueing systems. 96, 1-2, p. 153-167 15 p.

Bounds and limit theorems for a layered queueing model in electric vehicle charging
Aveklouris, A., Vlasiou, M. & Zwart, B., Oct 2019, In: Queueing systems. p. 83-137

A Stochastic Resource-Sharing Network for Electric Vehicle Charging
Aveklouris, A., Vlasiou, M. & Zwart, B., Sept 2019, In: IEEE transactions on control of network systems. 6, 3, p. 1050-1061 12 p.

Heavy-traffic approximations for a layered network with limited resources
Aveklouris, A., Vlasiou, M., Zhang, J. & Zwart, B., 30 Dec 2017, In: Probability and mathematical statistics. 37, 2, p. 497-532 36 p.

Electric vehicle charging: A queueing approach
Aveklouris, A., Nakahira, Y., Vlasiou, M. & Zwart, B., 2017, In: SIGMETRICS performance evaluation review. 45, 2

Server waiting times in infinite supply polling systems with preparation times
Dorsman, J-PL., Perel, N. & Vlasiou, M., Apr 2016, In: Probability in the engineering and informational sciences. 30, 2, p. 153-184 32 p.

Asymptotic error bounds for truncated buffer approximations of a 2-node tandem queue
Vatamidou, E., Adan, I., Vlasiou, M. & Zwart, B., 2016, Ninth International Conference on Matrix-Analytic Methods in Stochastic Models.

Asymptotic error bounds for truncated buffer approximations of a 2-node tandem queue: Ninth International Conference on Matrix-Analytic Methods in Stochastic Models (MAM9), 28-30 June 2016, Budapest, Hungary
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, A. P., 2016.

2015

Dynamic server assignment in an extended machine-repair model
Dorsman, J. L., Bhulai, S. & Vlasiou, M., 2015, In: IIE transactions. 47, 4, p. 392-413 22 p.

Heavy-traffic asymptotics for networks of parallel queues with Markov-modulated service speeds
Dorsman, J. L., Vlasiou, M. & Zwart, B., 2015, In: Queueing systems. 79, 3, p. 293-319 27 p.

Markovian polling systems with an application to wireless random-access networks
Dorsman, J. L., Borst, S. C., Boxma, O. J. & Vlasiou, M., 2015, In: Performance evaluation. 85-86, p. 33-51 19 p.

2014

A Lévy input fluid queue with input and workload regulation
Palmowski, Z. B., Vlasiou, M. & Zwart, B., 2014, In: Queueing systems. 76, 1, p. 21-36 16 p.

Corrected phase-type approximations for heavy-tailed queueing models in a Markovian environment: Stochastic Networks Conference 2014, 23-27 June 2014, Amsterdam, The Netherlands
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, A. P., 2014.

Corrected phase-type approximations of heavy-tailed queueing models in a Markovian environment
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, B., 2014, In: Stochastic models. 30, 4, p. 598-638 41 p.

On the accuracy of phase-type approximations of heavy-tailed risk models
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, B., 2014, In: Scandinavian actuarial journal. 2014, 6, p. 510-534 25 p.

2013

Analytic properties of two-carousel systems
Bossier, R., Vlasiou, M. & Adan, I., Jan 2013, In: Probability in the engineering and informational sciences. 27, 1, p. 57-84 28 p.

Analysis of a two-layered network by means of the power-series algorithm
Dorsman, J. L., Mei van der, R. D. & Vlasiou, M., 2013, In: Performance evaluation. 70, 12, p. 1072-1089 18 p.

Corrected phase-type approximations for the workload of the MAP/G/1 queue with heavy-tailed service times
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, A. P., 2013.

Corrected phase-type approximations for the workload of the MAP/G/1 queue with heavy-tailed service times
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, B., 2013, In: SIGMETRICS performance evaluation review. 41, 2, 3 p.

Corrected phase-type approximations of heavy-tailed risk models using perturbation analysis
Vatamidou, E., Adan, I. J. B. F., Vlasiou, M. & Zwart, B., 2013, In: Insurance: mathematics & economics. 53, 2, p. 366-378 13 p.

Cyclic-type polling models with preparation times
Perel, N., Dorsman, J. L. & Vlasiou, M., 2013, Proceedings of the 2nd International Conference on Operations Research and Enterprise Systems - Volume 1: ICORES. INSTICC PRESS, p. 14-23 10 p.
Marginal queue length approximations for a two-layered network with correlated queues
Dorsman, J. L., Boxma, O. J. & Vlasiou, M., 2013, In: Queueing systems. 75, 1, p. 29-63 35 p.

Parallel queueing networks with Markov-modulated service speeds in heavy traffic
Dorsman, J-P. L., Vlasiou, M. & Zwart, B., 2013, In: SIGMETRICS performance evaluation review. 41, 2, p. 47-49 3 p.

2012

Separation of timescales in a two-layered network
Vlasiou, M., Zhang, J., Zwart, B. & Mei van der, R. D., 2012, 2012 24th International Teletraffic Congress (ITC 24). 8 p.

2011

A Lévy input model with additional state-dependent services
Palmowski, Z. & Vlasiou, M., 2011, In: Stochastic processes and their applications. 121, 7, p. 1546-1564 19 p.

Regenerative processes
Vlasiou, M., 2011, Wiley encyclopedia of operations research and management science. Cochran, J. J., Cox, L. A., Keskinocak, P., Kharoufeh, J. P. & Smith, J. C. (eds.). Hoboken: Wiley, p. 1-6 6 p.

Renewal processes with costs and rewards
Vlasiou, M., 2011, Wiley encyclopedia of operations research and management science. Cochran, J. J., Cox, L. A., Keskinocak, P., Kharoufeh, J. P. & Smith, J. C. (eds.). Hoboken: Wiley, 6 p.

2010

Tail asymptotics for a random sign Lindley recursion
Vlasiou, M. & Palmowski, Z., 1 Mar 2010, In: Journal of applied probability. 47, 1, p. 72-83

A survey on performance analysis of warehouse carousel systems
Litvak, N. & Vlasiou, M., 2010, In: Statistica Neerlandica. 64, 4, p. 401-447 48 p.

2009

A two-station queue with dependent preparation and service times
Vlasiou, M., Adan, I. J. B. F. & Boxma, O. J., 2009, In: European journal of operational research. 195, 1, p. 104-116

2008

M/G/∞ polling systems with random visit times
Vlasiou, M. & Yechiali, U., 2008, In: Probability in the engineering and informational sciences. 22, 1, p. 81-105 25 p.

2007

On queues with service and interarrival times depending on waiting times
Boxma, O. J. & Vlasiou, M., 20 Mar 2007, In: Queueing systems. 56, p. 121-132

Exact solution to a Lindley-type equation on a bounded support
Vlasiou, M. & Adan, I. J. B. F., 1 Jan 2007, In: Operations research letters. 35, 1, p. 105-113
A multi-station queue with dependent interarrival and service times
Vlasiou, M., Adan, I. J. B. F. & Boxma, O. J., 2007.

A non-increasing Lindley-type equation
Vlasiou, M., 2007, In: Queueing systems. 56, 1, p. 41-52

Time-dependent behaviour of an alternating service queue
Vlasiou, M. & Zwart, B., 2007, In: Stochastic models. 23, 2, p. 235-263

2005

An alternating service problem
Vlasiou, M. & Adan, I. J. B. F., 2005, In: Probability in the engineering and informational sciences. 19, 4, p. 409-426

2004

A Lindley-type equation arising from a carousel problem
Vlasiou, M., Adan, I. J. B. F. & Wessels, J., 2004, In: Journal of applied probability. 41, 4, p. 1171-1181 11 p.

Activities

The Tenth International Conference on Data Analytics
Maria Vlasiou (Member of programme committee)
3 Oct 2021 → 7 Oct 2021

First joint CWM - EWM meeting
Maria Vlasiou (Organiser)
21 Mar 2021

10th International Conference on Operations Research and Enterprise Systems, ICORES 2021
Maria Vlasiou (Member of programme committee)
2021

INFORMS Annual Meeting 2021
Maria Vlasiou (Member of programme committee)
2021

OR Spectrum (Journal)
Maria Vlasiou (Editor)
2021 → …

European Conference on Queueing Theory
Maria Vlasiou (Member of programme committee)
2020

International Mathematical Union (External organisation)
Maria Vlasiou (Member)
2018 → …

IISE Transactions (Journal)
Maria Vlasiou (Editor)
2017 → …

**Lorentz Center (External organisation)**
Maria Vlasiou (Member)
2017 → 2021

**Athens Institute for Education and Research (External organisation)**
Maria Vlasiou (Member)
2016 → …

**Mathematical methods of operations research (Journal)**
Maria Vlasiou (Editor)
2016 → …

**National Science Foundation (External organisation)**
Maria Vlasiou (Member)
2016

**National Science Foundation (External organisation)**
Maria Vlasiou (Member)
2014

**European Women in Mathematics (External organisation)**
Maria Vlasiou (Chair)
1 Jan 2013 → 28 Feb 2022

**Landelijk Netwerk Mathematische Besliskunde (LNMB) (External organisation)**
Maria Vlasiou (Member)
2008 → …

**Research School for Operations Management and Logistics (Beta) (External organisation)**
Maria Vlasiou (Member)
2008 → …

**WISE (External organisation)**
Maria Vlasiou (Member)
2008 → …

**INFORMS (Institute for Operations Research and Management Sciences) (External organisation)**
Maria Vlasiou (Member)
2003 → …

**INFORMS Applied Probability Society (APS) (External organisation)**
Maria Vlasiou (Member)
2003 → …

**Prizes**

**2017 AMSI-ANZIAM Lecturer**
Vlasiou, Maria (Recipient), 2017

**Best Paper Award. International Conference on Operations Research and Enterprise Systems**
Vlasiou, Maria (Recipient), 2013
Excellent Course  
Vlasiou, Maria (Recipient), 2021

Marcel Neuts Student Paper Award  
Vlasiou, Maria (Recipient), 14 Jan 2014

Third prize. Eighth Conference in Actuarial Science & Finance  
Vlasiou, Maria (Recipient), 2014

Awards