

## CURRICULUM VITAE

### Vladas Pipiras

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### Education

- 2002 May Boston University, Boston, USA. Ph.D. in Mathematics (Murad S. Taqqu, advisor)
- 1997 June Université Paris 6, Paris, France. M.Sc. (French D.E.A.) in Probability and Applications (Jean Jacod, advisor)
- 1996 June Vilnius University, Vilnius, Lithuania. B.Sc. in Mathematics (Vigirdas Mackevičius, advisor)

### Employment

- 2012– Professor, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill
- 2019–2024 Chair, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill
- 2007–2012 Associate Professor (early tenure), Department of Statistics and Operations Research, University of North Carolina at Chapel Hill
- 2002–2007 Assistant Professor, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill
- 2008–2010 Ciência 2007 Researcher, CEMAT (Center of Mathematics and its Applications), Instituto Superior Técnico, Technical University of Lisbon, Portugal

### Invited and Other Positions

- 2020- Affiliated Faculty, Department of Psychology & Neuroscience, University of North Carolina at Chapel Hill
- 2013– Senior Fellow of ONR Summer Faculty Research Program, David Taylor Model Basin (NSWCCD), Bethesda, Maryland
- (Multiple times)
- 2012 One-month invited professorship at Université Paris-Est Créteil, France. Invitation by S. Jaffard
- 2011–2023 An official collaborator for CEMAT (Center of Mathematics and its Applications), Instituto Superior Técnico, Technical University of Lisbon, Portugal
- 2006– Physics Laboratory, ENS Lyon, France, CNRS invited researcher in May, 2006. Multiple invited visits by P. Abry to the same laboratory before and after 2006
- 2005 May Department of Mathematics and Statistics, University of Helsinki, Finland, Fractional May 2005. Invitation by I. Norros
- 2003 Fall Statistical and Applied Mathematical Sciences Institute (SAMSI), North Carolina, Faculty fellow associated with the program “Network modeling for the Internet”

## Research Interests

Probability and Statistics:

High-dimensional time series and spatial fields; Networks

Extremes and uncertainty quantification in physical systems

Sampling and streaming algorithms in connection to “big data”

Scaling and self-similar phenomena

Applications to:

Economics and Finance, Computer networks, Physical sciences, Engineering, Oceanography, Psychology and Neuroscience

## Grants and Awards

- 2025, “EVA 2025: The 14th International Conference on Extreme Value Analysis,” National Science Foundation grant, PI: **V. Pipiras**, co-PIs: M. Olvera-Cravioto, R. Smith, \$20,000
- 2023–2026, “IMR: MM-1C: Enabling continual passive estimation of performance of Internet transfers: Online measurement and classification methods,” National Science Foundation grant, PI: J. Kaur, co-PI: **V. Pipiras**, \$400,000
- 2023–2027, “Reduced-order and multi-fidelity approaches with statistical and modeling uncertainties for naval applications,” Office of Naval Research grant, PI: **V. Pipiras**, \$300,000
- 2022–2027, “RTG: Networks: Foundations in Probability, Optimization, and Data Sciences,” National Science Foundation grant, PI: A. Budhiraja, co-PIs: S. Banerjee, S. Bhamidi, N. Fraiman, Y. Li, M. Olvera-Cravioto, **V. Pipiras**, Q. Tran-Dinh \$2,322,000
- 2021–2025, “Network time series: From dynamics to coevolution,” National Science Foundation grant, PI: **V. Pipiras**, co-PI: S. Bhamidi, \$220,000
- 2019–2022, “Quantifying extreme ship loads and motions: Statistical challenges and approaches,” Office of Naval Research grant, PI: **V. Pipiras**, \$300,000
- 2017–2020, “Statistical models, inference, and computation for multidimensional time series data,” National Science Foundation grant, PI: **V. Pipiras**, \$200,000
- 2016–2017, Data@Carolina Course Development Grant at UNC, **V. Pipiras**, \$7,000
- 2013–2015, “Probabilistic models and inference of multifractals,” National Security Agency grant, PI: **V. Pipiras**, \$52,000
- 2011–2012, “Conference on long-range dependence, self-similarity and heavy tails,” Army Research Office grant, PI: **V. Pipiras**, \$15,000
- 2010–2013, “Traffic analysis, modeling and measurements for the future management of Internet”, Member of the team of the FCT (Portuguese Science and Technology Foundation) grant, Portugal, \$130,000
- 2006–2009, “Collaborative research: heavy traffic limit models and control analysis for wireless queuing systems - incorporating long range dependence and heavy tails,” National Science Foundation grant, PIs: R. Buche, A. Ghosh and **V. Pipiras**, \$43,000
- 2005–2008, “Random processes and fields: discrete approximations, special wavelet-based decompositions and simulation,” National Science Foundation grant, PI: **V. Pipiras**, \$105,000

- 2004, Junior Faculty Development Award at UNC, **V. Pípiras**, \$5,000

## Other Awards

2017 Fall, Competitive Senior Faculty Research and Scholarly Leave at UNC

2013– (Multiple times), Senior Fellow of ONR Summer Faculty Research Program, David Taylor Model Basin (NSWCCD), Bethesda, Maryland

1997–2002, Presidential fellowship, Research assistantship, Boston University

1996–1997, Recipient of a French government stipend, Université Paris 6

## Books

- **V. Pípiras** and M. S. Taqqu (2017), *Stable Self-Similar Processes with Stationary Increments*. SpringerBriefs, 135 pages.  
doi: 10.1007/978-3-319-62331-3
- **V. Pípiras** and M. S. Taqqu (2017), *Long-Range Dependence and Self-Similarity*. Cambridge University Press, 688 pages.  
doi: 10.1017/CBO9781139600347
- S. Cambanis, M. R. Leadbetter and **V. Pípiras** (2014), *A Basic Course in Measure and Probability: Theory for Applications*, Cambridge University Press, 374 pages.  
doi: 10.1017/CBO9781139103947

## Journal and Collection Papers<sup>\*†</sup>

105. M. Kim<sup>\*</sup>, B. Brown<sup>\*</sup> and **V. Pípiras**, “Parametric multifidelity Monte Carlo estimation with applications to extremes,” *Technometrics*. To appear.
104. N. Antunes, S. Banerjee, S. Bhamidi and **V. Pípiras**, “Attribute network models, stochastic approximation, and network sampling and ranking algorithms,” *The Annals of Applied Probability*. To appear.
103. C. M. Crawford<sup>\*</sup>, J. J. Park, S.-M. Chow, A. F. Ernst, **V. Pípiras**, Z. F. Fisher, “Penalized subgrouping of heterogeneous time series,” *Multivariate Behavioral Research*. To appear.
102. Y. Kim<sup>\*</sup>, M.-C. Düker, Z. F. Fisher and **V. Pípiras**, “Latent Gaussian dynamic factor modeling and forecasting for multivariate count time series,” *Journal of Time Series Analysis*. To appear.  
doi: <http://doi.org/10.1111/jtsa.70016>
101. S. Bai, H. Dehling, P. Kokoszka, **V. Pípiras**, S. Stoev and W. Willinger, “A conversation with Murad S. Taqqu,” *Statistical Science*. To appear.
100. N. Antunes, G. Jacinto and **V. Pípiras** (2025), “Regularization and central limit theorems for an inverse problem in network sampling applications,” *Journal of Nonparametric Statistics*, **37** (3), pp. 561–579.  
doi: <https://doi.org/10.1080/10485252.2024.2408301>

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<sup>\*</sup> Graduate student co-author at the time the research was conducted.

<sup>†</sup> Undergraduate student co-author at the time the research was conducted.

99. M. Kim\*, K. O'Connor\*, **V. Pipiras** and T. Sapsis (2025), "Sampling low-fidelity outputs for estimation of high-fidelity density and its tails," *SIAM/ASA Journal on Uncertainty Quantification*, **13** (1), pp. 30–62.  
doi: <https://doi.org/10.1137/24M1639142>
98. M.-C. Düker, R. Lund and **V. Pipiras** (2024), "High-dimensional latent Gaussian count time series: Concentration for autocovariance matrices and applications," *Electronic Journal of Statistics*, **18** (2), pp. 5484–5562.  
doi: <https://doi.org/10.1214/24-EJS2292>
97. Y. Kim\*, Z. F. Fisher and **V. Pipiras** (2024), "Group integrative dynamic factor models for inter- and intra-subject brain networks," *Biometrical Journal*, **66** (8), e202300370.  
doi: [10.1002/bimj.202300370](https://doi.org/10.1002/bimj.202300370)
96. N. Antunes, S. Banerjee, S. Bhamidi and **V. Pipiras** (2024), "Representation, ranking and bias of minorities in sampling attributed networks," *Social Network Analysis and Mining*, **14**, Article number: 158.  
doi: [10.1007/s13278-024-01326-6](https://doi.org/10.1007/s13278-024-01326-6)
95. S. Kechagias, **V. Pipiras** and P. Zouboulouglou\* (2024), "Cyclical long memory: Decoupling, modulation and modeling," *Stochastic Processes and Their Applications*, **175**, 104403.  
doi: [10.1016/j.spa.2024.104403](https://doi.org/10.1016/j.spa.2024.104403)
94. B. Leinwand and **V. Pipiras** (2024), "Augmented degree correction for bipartite networks with applications to recommender systems," *Applied Network Science*, **9**, Article number: 19.  
doi: [10.1007/s41109-024-00630-6](https://doi.org/10.1007/s41109-024-00630-6)
93. Z. F. Fisher, Y. Kim\*, **V. Pipiras**, C. Crawford, D. J. Petrie, M. D. Hunter and C. F. Geier (2024), "Structured estimation of heterogeneous time series," *Multivariate Behavioral Research*, **59** (6), pp. 1270–1289.  
doi: [10.1080/00273171.2023.2283837](https://doi.org/10.1080/00273171.2023.2283837)
92. C. Wandji, V. Shigunov, **V. Pipiras** and V. Belenky, "Benchmarking of direct counting approaches," *Ocean Engineering*, **296**, Article number: 116649.  
doi: [10.1016/j.oceaneng.2023.116649](https://doi.org/10.1016/j.oceaneng.2023.116649)
91. M. Levine, S. Edwards, D. Howard, K. Weems, T. Sapsis and **V. Pipiras** (2024), "Multi-fidelity data-adaptive autonomous seakeeping," *Ocean Engineering*, **292**, Article number: 116322.  
doi: [10.1016/j.oceaneng.2023.116322](https://doi.org/10.1016/j.oceaneng.2023.116322)
90. D. Glotzer\*, **V. Pipiras**, V. Belenky, K. Weems and T. Sapsis (2024), "Distributions and extreme value analysis of critical response rate and split-time metric in nonlinear oscillators with stochastic excitation," *Ocean Engineering*, **292**, Article number: 116538.  
doi: [10.1016/j.oceaneng.2023.116538](https://doi.org/10.1016/j.oceaneng.2023.116538)
89. V. Belenky, K. Weems, W.-M. Lin, **V. Pipiras** and T. Sapsis (2024), "Estimation of probability of capsizing with split-time method," *Ocean Engineering*, **292**, Article number: 116452.  
doi: [10.1016/j.oceaneng.2023.116452](https://doi.org/10.1016/j.oceaneng.2023.116452)
88. B. Campbell, V. Belenky, **V. Pipiras**, K. Weems and T. Sapsis (2023), "Estimation of probability of large roll angle with envelope peaks over threshold method," *Ocean Engineering*, **290**, Article number: 116296.  
doi: [10.1016/j.oceaneng.2023.116296](https://doi.org/10.1016/j.oceaneng.2023.116296)

87. M. Kim\*, **V. Pípiras**, A. Reed and K. Weems (2023), “Calibration of low-fidelity ship motion programs through regressions of high-fidelity forces,” *Ocean Engineering*, **290**, Article number: 116321.  
doi: 10.1016/j.oceaneng.2023.116321
86. D. Glotzer\*, **V. Pípiras**, V. Belenky, M. Levine and K. Weems (2023), “Statistical inference for mean and variance of oscillatory processes,” *Ocean Engineering*, **289**, Article number: 116215.  
doi: 10.1016/j.oceaneng.2023.116215
85. C. Baek, M.-C. Düker\* and **V. Pípiras** (2023), “Local Whittle estimation of high-dimensional long-run variance and precision matrices,” *The Annals of Statistics*, **51** (6), pp. 2386-2414.  
doi: 10.1214/23-AOS2330
84. B. Brown\* and **V. Pípiras** (2023), “On extending multifidelity uncertainty quantification methods from non-rare to rare problems,” in K. J. Spyrou, V. L. Belenky, T. Katayama, I. Bakalov, A. Francescutto, editors, *Contemporary Ideas on Ship Stability. Fluid Mechanics and Its Applications*, vol 134. Springer.  
doi: 10.1007/978-3-031-16329-6\_11
83. K. Weems, V. Belenky, B. Campbell and **V. Pípiras** (2023), “Statistical validation of the splittime method with volumebased numerical simulation,” in K. J. Spyrou, V. L. Belenky, T. Katayama, I. Bakalov, A. Francescutto, editors, *Contemporary Ideas on Ship Stability. Fluid Mechanics and Its Applications*, vol 134. Springer.  
doi: 10.1007/978-3-031-16329-6\_14
82. B. Campbell, K. Weems, V. Belenky, **V. Pípiras** and T. Sapsis (2023), “Envelope peaks over threshold (EPOT) application and verification,” in K. J. Spyrou, V. L. Belenky, T. Katayama, I. Bakalov, A. Francescutto, editors, *Contemporary Ideas on Ship Stability. Fluid Mechanics and Its Applications*, vol 134. Springer.  
doi: 10.1007/978-3-031-16329-6\_16
81. V. Belenky, K. Weems, K. Spyrou, **V. Pípiras** and T. Sapsis (2023), “Modeling broaching-to and capsizing with extreme value theory,” in K. J. Spyrou, V. L. Belenky, T. Katayama, I. Bakalov, A. Francescutto, editors, *Contemporary Ideas on Ship Stability. Fluid Mechanics and Its Applications*, vol 134. Springer.  
doi: 10.1007/978-3-031-16329-6\_26
80. N. Antunes, S. Banerjee, S. Bhamidi and **V. Pípiras** (2023), “Learning attribute and homophily measures through random walks,” *Applied Network Science*, **8**, Article number: 39.  
doi: 10.1007/s41109-023-00558-3
79. C. Baek, B. Leinwand\*, K. Lindquist, S.-O. Jeung, J. Hopfinger, K. Gates and **V. Pípiras** (2023), “Detecting changes in correlation networks with application to functional connectivity of fMRI data,” *Psychometrika*, **88**, pp. 636–655.  
doi: 10.1007/s11336-023-09908-7
78. Y. Jia\*, S. Kechagias, J. Livsey, R. Lund and **V. Pípiras** (2023), “Latent Gaussian count time series,” *Journal of American Statistical Association*, **118**, pp. 596–606.  
doi: 10.1080/01621459.2021.1944874
77. B. Leinwand\* and **V. Pípiras** (2022), “Block dense weighted networks with augmented degree correction,” *Network Science*, **10**, pp. 301–321.  
doi: 10.1017/nws.2022.23

76. Z. F. Fisher, Y. Kim\*, B. L. Fredrickson and **V. Pípiras** (2022), “Penalized estimation and forecasting of multiple subject intensive longitudinal data,” *Psychometrika*, **87**, pp. 1–29.  
doi: 10.1007/s11336-021-09825-7
75. M.-C. Düker\*, R. Sundararajan and **V. Pípiras** (2022), “Cotrending: testing for common deterministic trends in varying means model,” *Journal of Multivariate Analysis*, **187**, 104825.  
doi: 10.1016/j.jmva.2021.104825
74. Z. F. Fisher\*, S.-M. Chow, P. C. M. Molenaar, B. L. Fredrickson, **V. Pípiras** and K. M. Gates (2022), “A square-root second-order extended Kalman filtering approach for estimating smoothly time-varying parameters,” *Multivariate Behavioral Research*, **57**, pp. 134–152.  
doi: 10.1080/00273171.2020.1815513
73. N. Antunes, T. Guo<sup>†</sup> and **V. Pípiras** (2021), “Sampling methods and estimation of triangle count distributions in large networks,” *Network Science*, **9**, pp. S134–S156.  
doi: 10.1017/nws.2021.2
72. R. A. Davis, K. Fokianos, S. H. Holan, H. Joe, J. Livsey, R. Lund, **V. Pípiras** and N. Ravishanker (2021), “Count time series: A methodological review,” *Journal of American Statistical Association*, **116**, pp. 1533–1547.  
doi: 10.1080/01621459.2021.1904957
71. N. Antunes, S. Bhamidi, T. Guo<sup>†</sup>, **V. Pípiras** and B. Wang<sup>†</sup> (2021), “Sampling based estimation of in-degree distribution for directed complex networks,” *Journal of Computational and Graphical Statistics*, **30**, pp. 863–876.  
doi: 10.1080/10618600.2021.1873143
70. C. Baek, K. Gates, B. Leinwand\* and **V. Pípiras** (2021), “Two sample tests for high-dimensional autocovariances,” *Computational Statistics and Data Analysis*, **153**, 107067.  
doi: 10.1016/j.csda.2020.107067
69. R. Sundararajan\*, **V. Pípiras** and M. Pourahmadi (2021), “Stationary subspace analysis of nonstationary covariance processes: eigenstructure description and testing,” *Bernoulli*, **27**, pp. 381–418.  
doi: 10.3150/20-BEJ1243
68. **V. Pípiras** (2020), “Pitfalls of data-driven peaks-over-threshold analysis: perspectives from extreme ship motions,” *Probabilistic Engineering Mechanics*, **60**, 103053.  
doi: 10.1016/j.probengmech.2020.103053
67. C. Baek, S. Kechagias and **V. Pípiras** (2020), “Asymptotics of bivariate local Whittle estimators with applications to fractal connectivity,” *Journal of Statistical Planning and Inference*, **205**, pp. 245–268.  
doi: 10.1016/j.jspi.2019.07.007
66. S. Kechagias\* and **V. Pípiras** (2020), “Modeling bivariate long-range dependence with general phase,” *Journal of Time Series Analysis*, **41**, pp. 268–292.  
doi: 10.1111/jtsa.12504
65. H. Hurd and **V. Pípiras** (2020), “Modeling periodic autoregressive time series with multiple periodic effects,” in F. Chaari, J. Leskow, R. Zimroz, A. Wylomanska, A. Dudek, editors, *Cyclostationarity: Theory and Methods IV*, (2020), pp. 1–18.  
doi: 10.1007/978-3-030-22529-2\_1

64. V. Belenky, D. Glotzer\*, **V. Pipiras** and T. Sapsis (2019), “Distribution tail structure and extreme value analysis of constrained piecewise linear oscillators,” *Probabilistic Engineering Mechanics*, **57**, pp. 1–13.  
doi: 10.1016/j.probenmech.2019.04.001
63. C. Baek, R. Davis and **V. Pipiras** (2018), “Periodic dynamic factor models: estimation approaches and applications,” *Electronic Journal of Statistics*, **12**, pp. 4377–4411.  
doi: 10.1214/18-EJS1518
62. J. Livsey, S. Kechagias, R. Lund and **V. Pipiras** (2018), “Multivariate integer-valued time series with flexible autocovariances and their application to major hurricane counts,” *The Annals of Applied Statistics*, **12**, pp. 408–431.  
doi: 10.1214/17-AOAS1098
61. G. Didier, M. Meerschaert and **V. Pipiras** (2018), “Domain and range symmetries of operator fractional Brownian fields,” *Stochastic Processes and Their Applications*, **128**, pp. 39–78.  
doi: 10.1016/j.spa.2017.04.003
60. N. Antunes, P. Abry, **V. Pipiras** and D. Veitch (2017), “Small and large scale behavior of moments of Poisson cluster processes with application to Internet traffic,” *ESAIM Probability & Statistics*, **21**, pp. 369–393.  
doi: 10.1051/ps/2017018
59. G. Didier, M. Meerschaert and **V. Pipiras** (2017), “Exponents of operator self-similar random fields,” *Journal of Mathematical Analysis and Applications*, **448**, pp. 1450–1466.  
doi: 10.1016/j.jmaa.2016.11.055
58. C. Baek, R. Davis and **V. Pipiras** (2017), “Sparse seasonal and periodic vector autoregressive modeling,” *Computational Statistics and Data Analysis*, **106**, pp. 103–126.  
doi: 10.1016/j.csda.2016.09.005
57. D. Glotzer\*, **V. Pipiras**, V. Belenky, B. Campbell and T. Smith (2017), “Confidence intervals for exceedance probabilities with application to extreme ship motions,” *REVSTAT*, **15**, pp. 537–563.  
doi: 10.57805/revstat.v15i4.226
56. B. Campbell, V. Belenky and **V. Pipiras** (2016), “Application of the envelope peaks over threshold (EPOT) method for probabilistic assessment of dynamic stability,” *Ocean Engineering*, **120**, pp. 298–304.  
doi: 10.1016/j.oceaneng.2016.03.006
55. N. Antunes and **V. Pipiras** (2016), “Estimation of flow distributions from sampled traffic,” *ACM Transactions on Modeling and Performance Evaluation of Computing Systems*, **1**, Article No. 11.  
doi: 10.1145/2891106
54. H. Helgason, S. Kechagias\* and **V. Pipiras** (2016), “Convex optimization and feasible circulant matrix embeddings in synthesis of stationary Gaussian fields,” *Journal of Computational and Graphical Statistics*, **25**, pp. 1158–1175.  
doi: 10.1080/10618600.2015.1075408
53. R. Chaudhuri\* and **V. Pipiras** (2016), “Non-Gaussian semi-stable laws arising in sampling of finite point processes,” *Bernoulli*, **22**, pp. 1055–1092.  
doi: 10.3150/14-BEJ686
52. S. Kechagias\* and **V. Pipiras** (2015), “Definitions and representations of multivariate long-range dependent time series,” *Journal of Time Series Analysis*, **36**, pp. 1–25.  
doi: 10.1111/jtsa.12086

51. A. Budhiraja, **V. Pipiras** and X. Song (2015), “Admission control for multidimensional workload with heavy tails and fractional Ornstein-Uhlenbeck process,” *Advances in Applied Probability*, **47**, pp. 476–505.  
doi: 10.1239/aap/1435236984
50. C. Baek, G. Didier and **V. Pipiras** (2014), “On integral representations of operator fractional Brownian fields,” *Statistics & Probability Letters*, **92**, pp. 190–198.  
doi: 10.1016/j.spl.2014.05.015
49. C. Baek and **V. Pipiras** (2014), “On distinguishing multiple changes in mean and long-range dependence using local Whittle estimation,” *Electronic Journal of Statistics*, **8**, pp. 931–964.  
doi: 10.1214/14-EJS916
48. C. Baek, N. Fortuna and **V. Pipiras** (2014), “Can Markov switching model generate long memory?,” *Economics Letters*, **124**, pp. 117–121.  
doi: 10.1016/j.econlet.2014.04.030
47. H. Helgason, **V. Pipiras** and P. Abry (2014), “Smoothing windows for the synthesis of Gaussian stationary random fields using circulant matrix embedding,” *Journal of Computational and Graphical Statistics*, **23**, pp. 616–635.  
doi: 10.1080/10618600.2013.818543
46. **V. Pipiras** and M. S. Taqqu (2014), “Long-range dependence of the two-dimensional Ising model at critical temperature,” Chapter 18 (42 pages) in *Benoit Mandelbrot: A Life in Many Dimensions*, World Scientific Publishing Company, edited by M. Frame and N. Cohen.  
doi: 10.1142/9789814366076\_0018
45. G. Didier, S. Jaffard and **V. Pipiras** (2013), “On the Riesz and vaguelet property of  $L^2$ -unbounded transformations of orthogonal wavelet bases,” *Journal of Approximation Theory*, **176**, pp. 94–117.  
doi: 10.1016/j.jat.2013.09.001
44. C. Baek\* and **V. Pipiras** (2012), “Statistical tests for a single change in mean against long-range dependence,” *Journal of Time Series Analysis*, **33**, pp. 131–151.  
doi: 10.1111/j.1467-9892.2011.00747.x
43. R. Buche, A. Ghosh and **V. Pipiras** (2012), “Heavy traffic approximations of a queue with varying service rates and general arrivals,” *Stochastic Models*, **28**, pp. 63–108.  
doi: 10.1080/15326349.2012.646526
42. G. Didier and **V. Pipiras** (2012), “Exponents, symmetry groups and classification of operator fractional Brownian motions,” *Journal of Theoretical Probability*, **25**, pp. 353–395.  
doi: 10.1007/s10959-011-0348-5
41. P. Abry, H. Helgason and **V. Pipiras** (2011), “Wavelet-based analysis of non-Gaussian long-range dependent processes and estimation of the Hurst parameter,” *Lithuanian Mathematical Journal*, **51**, pp. 287–302.  
doi: 10.1007/s10986-011-9126-4
40. N. Antunes and **V. Pipiras** (2011), “Probabilistic sampling of finite renewal processes,” *Bernoulli*, **17**, pp. 1285–1326.  
doi: 10.3150/10-BEJ321
39. C. Park, F. Hernandez-Campos, L. Le, J. S. Marron, J. Park, **V. Pipiras**, F. D. Smith, R. L. Smith, M. Trovero, and Z. Zhu (2011), “Long range dependence analysis of Internet traffic,” *Journal of Applied Statistics*, **38**, pp. 1407–1433.  
doi: 10.1080/02664763.2010.505949

38. S. G. Donald, N. Fortuna and **V. Pipliras** (2011), “Local and global rank tests for multivariate varying-coefficient models,” *Journal of Business and Economics Statistics*, **29**, pp. 295–306.  
doi: 10.1198/jbes.2010.07303
37. G. Didier\* and **V. Pipliras** (2011), “Integral representations and properties of operator fractional Brownian motions,” *Bernoulli*, **17**, pp. 1–33.  
doi: 10.3150/10-BEJ259
36. H. Helgason, P. Abry and **V. Pipliras** (2011), “Synthesis of multivariate stationary series with prescribed marginal distributions and covariance using circulant matrix embedding,” *Signal Processing*, **91**, pp. 1741–1758.  
doi: 10.1016/j.sigpro.2011.01.020
35. H. Helgason, P. Abry and **V. Pipliras** (2011), “Fast and exact synthesis of stationary multivariate Gaussian time series using circulant embedding,” *Signal Processing*, **91**, pp. 1123–1133.  
doi: 10.1016/j.sigpro.2010.10.014
34. **V. Pipliras** and M. S. Taqqu (2010), “Regularization and integral representations of Hermite processes,” *Statistics & Probability Letters*, **80**, pp. 2014–2023.  
doi: 10.1016/j.spl.2010.09.008
33. G. Didier\* and **V. Pipliras** (2010), “Adaptive wavelet decompositions of stationary time series,” *Journal of Time Series Analysis*, **31**, pp. 182–209.  
doi: 10.1111/j.1467-9892.2010.00656.x
32. **V. Pipliras** and M. S. Taqqu (2010), “Semi-additive functionals and cocycles in the context of self-similarity,” *Discussiones Mathematicae Probability and Statistics*, **30**, pp. 149–177.  
doi: 10.7151/dmps
31. C. Baek\* and **V. Pipliras** (2010), “Estimation of parameters in heavy-tailed distribution when its second order tail parameter is known,” *Journal of Statistical Planning and Inference*, **140**, pp. 1957–1967.  
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### Conference Papers and Extended Abstracts\*<sup>†</sup>

53. **V. Pipiras**, K. Weems and V. Belenky, “Non-Gaussianity, discretization and their consequences for uncertainty quantification in Longuet-Higgins model of random waves,” *20th International Congress of the International Maritime Association of the Mediterranean (IMAM 2025)*. In *Innovations in Sustainable Maritime Technology IMAM 2025*, Springer.

52. **V. Pipiras**, V. Belenky, K. Weems and T. Sapsis, “On physics-informed statistical reduced-order model for response and peaks of ship vertical bending moment in irregular waves,” *20th International Congress of the International Maritime Association of the Mediterranean*. In *Innovations in Sustainable Maritime Technology IMAM 2025*, Springer.
51. V. Belenky, K. Weems and **V. Pipiras** (2024), “Comparison of extrapolation methods,” *Proceedings of the 2nd International Conference on the Stability and Safety of Ships and Ocean Vehicles*, Wuxi, China.
50. R. Carpenter<sup>†</sup>, C. Vita<sup>†</sup> and **V. Pipiras** (2024), “Benchmarking deep learning architectures for predicting visual stimuli given single neuron spike patterns,” *Proceedings of the 33rd Annual Computational Neuroscience Meeting (CNS)*, Natal, Brazil. (Extended abstract)
49. M. Kim\*, **V. Pipiras** and T. Sapsis (2024), “Statistical reduced-order modeling of peaks of vertical bending moment in irregular waves,” *Proceedings of the 35th Symposium on Naval Hydrodynamics (SNH)*, Nantes, France.
48. T. Sapsis and **V. Pipiras** (2024), “Effect of slamming events on the statistics of the vertical bending moment,” *Proceedings of the 35th Symposium on Naval Hydrodynamics (SNH)*, Nantes, France.
47. V. Belenky, K. Weems, **V. Pipiras** and S. Aram (2024), “Uncertainty quantification for ship motions and loads with reduced-order models,” *Proceedings of the 35th Symposium on Naval Hydrodynamics (SNH)*, Nantes, France.
46. N. Antunes, S. Banerjee, S. Bhamidi and **V. Pipiras** (2023), “Minority representation and relative ranking in sampling attributed networks,” *Proceedings of Complex Networks and Their Applications XII*, Springer, Menton Riviera, France.  
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45. **V. Pipiras**, A. Reed, T. Sapsis and K. Weems (2023), “Longuet-Higgins wave model and ARMA representations,” *Proceedings of the 18th International Ship Stability Workshop (ISSW)*, Istanbul, Turkey. Proceedings link
44. K. Weems, **V. Pipiras** and V. Belenky (2023), “Multifidelity fast code for direct stability assessment,” *Proceedings of the 18th International Ship Stability Workshop (ISSW)*, Istanbul, Turkey. Proceedings link
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42. N. Antunes, S. Bhamidi and **V. Pipiras** (2022), “Learning attribute distributions through random walks,” *Proceedings of Complex Networks and Their Applications XI*, Springer, Palermo, Italy.  
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40. D. Howard, S. Edwards, M. Levine, T. Sapsis, K. Weems and **V. Pipiras** (2022), “A method for operational guidance in bimodal seas,” *Proceedings of the 18th International Ship Stability Workshop (ISSW)*, Gdansk, Poland. Proceedings link
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37. M. Levine, S. Edwards, D. Howard\*, V. Belenky, K. Weems, T. Sapsis and **V. Pipiras** (2022), “Data-adaptive autonomous seakeeping,” *Proceedings of the 34th Symposium on Naval Hydrodynamics (SNH)*, Washington, DC.
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34. **V. Pipiras**, V. Belenky, K. Weems, B. Brown\*, A. Frommer<sup>†</sup> and G. Ouimette<sup>†</sup> (2021), “Calibrating multifidelity ship motion codes through regression,” *Proceedings of the 1st International Conference on the Stability and Safety of Ships and Ocean Vehicles*, Glasgow, Scotland. Proceedings link
33. V. Belenky, K. Weems, T. Sapsis and **V. Pipiras** (2021), “Influence of deck submergence events on extreme properties of wave-induced VBM,” *Proceedings of the 1st International Conference on the Stability and Safety of Ships and Ocean Vehicles*, Glasgow, Scotland. Proceedings link
32. K. Weems, **V. Pipiras**, V. Belenky and T. Sapsis (2021), “Numerical simulation of VBM extreme values,” *Proceedings of the 1st International Conference on the Stability and Safety of Ships and Ocean Vehicles*, Glasgow, Scotland. Proceedings link
31. T. Sapsis, V. Belenky, K. Weems and **V. Pipiras** (2021), “Extreme properties of impact-induced vertical bending moments,” *Proceedings of the 1st International Conference on the Stability and Safety of Ships and Ocean Vehicles*, Glasgow, Scotland. Proceedings link
30. B. Brown\* and **V. Pipiras** (2020), “Statistical analysis of extreme ship loads: Physical distribution tails, limitations of data-driven approaches and model uncertainty,” *Proceedings of the 33rd Symposium on Naval Hydrodynamics*, Osaka, Japan.
29. T. Sapsis, **V. Pipiras**, K. Weems and V. Belenky (2020), “On extreme value properties of vertical bending moment,” *Proceedings of the 33rd Symposium on Naval Hydrodynamics*, Osaka, Japan.
28. B. Leinwand\*, G. Wu and **V. Pipiras** (2020), “Characterizing selective network vulnerability for Alzheimer’s disease by identifying critical connectome spectrum,” *Proceedings of the IEEE International Symposium on Biomedical Imaging*, Iowa City.  
doi: 10.1109/ISBI45749.2020.9098324
27. N. Antunes, T. Guo<sup>†</sup> and **V. Pipiras** (2019), “Induced edge samplings and triangle count distributions in large networks,” *Proceedings of Complex Networks and Their Applications VIII*, Springer, Lisbon, Portugal.  
doi: 10.1007/978-3-030-36683-4\_17
26. M.-C. Düker\* and **V. Pipiras** (2019), “Asymptotic results for multivariate local Whittle estimation with applications,” *Proceedings of the IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Guadeloupe, West Indies.  
doi: 10.1109/CAMSAP45676.2019.9022642

25. K. Weems, V. Belenky, B. Campbell, **V. Pipiras** and T. Sapsis (2019), “EPOT application and verification,” *Proceedings of 17th International Ship Stability Workshop*, Helsinki, Finland. Proceedings link
24. B. Brown\* and **V. Pipiras** (2019), “On extending multifidelity uncertainty quantification methods from non-rare to rare problems,” *Proceedings of 17th International Ship Stability Workshop*, Helsinki, Finland. Proceedings link
23. N. Antunes, **V. Pipiras** and G. Jacinto (2019), “Regularized inversion of flow size distribution,” *IEEE INFOCOM*, Paris, France.  
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22. V. Belenky, K. Weems, T. Sapsis and **V. Pipiras** (2018), “Metric of ship capsizing of random seas,” *Proceedings of the 8th Conference on Stochastic Mechanics (CSM-8)*, Paros, Greece.  
doi: 10.3850/978-981-11-2723-6.06-cd
21. **V. Pipiras** (2018), “Pitfalls of data-driven peaks-over-threshold analysis: perspectives from extreme ship motions,” *Proceedings of the 8th Conference on Stochastic Mechanics (CSM-8)*, Paros, Greece.  
doi: 10.3850/978-981-11-2723-6.44-cd
20. K. Weems, V. Belenky, M. Levine and **V. Pipiras** (2018), “Statistical uncertainty of measured and simulated ship motions,” *Proceedings of the 8th Conference on Stochastic Mechanics (CSM-8)*, Paros, Greece.  
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19. V. Belenky, K. Weems, **V. Pipiras**, D. Glotzer\* and T. Sapsis (2018), “Tail structure of roll and metric of capsizing in irregular waves,” *Proceedings of the 32nd Symposium on Naval Hydrodynamics*, Hamburg, Germany
18. V. Belenky, K. Weems and **V. Pipiras** (2018), “Extreme-value properties of the split-time metric,” *Proceedings of the 13th International Conference on the Stability of Ships and Ocean Vehicles*, Kobe, Japan. Proceedings link
17. **V. Pipiras**, D. Glotzer\*, V. Belenky, M. Levine and K. Weems (2018), “On confidence intervals of mean and variance estimates of ship motions,” *Proceedings of the 13th International Conference on the Stability of Ships and Ocean Vehicles*, Kobe, Japan. Proceedings link
16. D. Glotzer\* and **V. Pipiras** (2017), “Statistical perspectives on some problems arising in Naval Engineering,” *Proceedings of the 30th American Towing Tank Conference*, Bethesda.  
doi: 10.5957/ATTC-2017-0047
15. C. Baek, S. Kechagias and **V. Pipiras** (2017), “Semiparametric, parametric and possibly sparse models for multivariate long-range dependence,” *Proceedings of SPIE: Wavelets and Sparsity XVII*, San Diego.  
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14. V. Belenky, K. Weems, K. Spyrou, **V. Pipiras** and T. Sapsis (2017), “Modeling broaching-to and capsizing with extreme value theory,” *Proceedings of the 16th International Ship Stability Workshop*, Belgrade, Serbia. Proceedings link
13. N. Antunes, **V. Pipiras** and D. Veitch (2017), “Skampling for the flow duration distribution,” *Proceedings of the 29th International Teletraffic Congress*, Genoa, Italy.  
doi: 10.23919/ITC.2017.8064340

12. N. Antunes and **V. Pipiras** (2015), “Sampling and censoring in estimation of flow distributions,” *2015 IEEE International Conference on Communications (ICC)*, London, UK.  
doi: 10.1109/ICC.2015.7249257
11. V. Belenky, K. Weems and **V. Pipiras** (2015), “Statistical uncertainty of ship motion data,” *Proceedings of the 12th International Conference on the Stability of Ships and Ocean Vehicles*, Glasgow, Scotland. Proceedings link
10. V. Belenky, K. Weems and K. Spyrou and **V. Pipiras** (2014), “Split-time / critical derivative value approach for evaluation of probability of capsizing of a ship in irregular waves,” *Proceedings of the 7th International Conference on Computational Stochastic Mechanics (CSM-7)*, Santorini, Greece.  
doi: 10.3850/978-981-09-5348-5\_012
9. B. Campbell, V. Belenky and **V. Pipiras** (2014), “Properties of the tail of envelope peaks and its use for the prediction of the probability of exceedance for ship motions in irregular waves,” *Proceedings of the 7th International Conference on Computational Stochastic Mechanics (CSM-7)*, Santorini, Greece.  
doi: 10.3850/978-981-09-5348-5\_013
8. B. Campbell, V. Belenky and **V. Pipiras** (2014), “On the application of the generalized Pareto distribution for statistical extrapolation in the assessment of dynamic stability in irregular waves,” *Proceedings of the 14th International Ship Stability Workshop*, Kuala Lumpur, Malaysia. Proceedings link
7. V. Belenky, K. Weems, B. Campbell and **V. Pipiras** (2014), “Extrapolation and validation aspects of the split-time method,” *Proceedings of the 30th Symposium on Naval Hydrodynamics*, Hobart, Australia
6. V. Belenky, K. Weems and **V. Pipiras** (2013), “Split-time method for calculation of probability of capsizing due to pure loss of stability,” *Proceedings of the 13th International Ship Stability Workshop*, Brest, France. Proceedings link
5. V. Belenky, **V. Pipiras**, K. Kent, M. Hughes, B. Campbell and T. Smith (2013), “On the statistical uncertainties of time-domain-based assessment of stability failures: confidence interval for the mean and variance of a time series,” *Proceedings of the 13th International Ship Stability Workshop*, Brest, France. Proceedings link
4. N. Antunes and **V. Pipiras** (2012), “Estimation of flow distributions tails from sampled traffic,” *2012 IEEE Statistical Signal Processing Workshop (SSP)*, Ann Arbor.  
doi: 10.1109/SSP.2012.6319825
3. N. Antunes and **V. Pipiras** (2012), “Inverting flow durations from sampled traffic,” *Proceedings of 24th International Teletraffic Congress (ITC)*, Krakow, Poland. Paper link
2. R. Buche, A. Ghosh and **V. Pipiras** (2007), “Heavy traffic limits in a wireless queueing model with long-range dependence,” *Proceedings of 2007 46th IEEE Conference on Decision and Control*, New Orleans.  
doi: 10.1109/CDC.2007.4434727
1. P. Abry, H. Wendt and **V. Pipiras** (2007), “Extreme values, heavy tails and linearization effect: a contribution to empirical multifractal analysis,” *Proceedings of GRETSI 2007 conference*, Troyes, France

## Unpublished

- S. G. Donald, N. Fortuna and **V. Pipliras**, “On rank estimation in semidefinite matrices.” Preprint. Available at <http://pipiras.web.unc.edu>
- **V. Pipliras**, “On the usefulness of wavelet-based simulation of fractional Brownian motion.” Preprint. Available at <http://pipiras.web.unc.edu>

## Preprints<sup>\*†</sup>

D. Patel\*, H. Shen\*, S. Bhamidi, Y. Liu and **V. Pipliras**, “Consistency of Lloyd’s algorithm under perturbations.”

Arxiv: <http://arxiv.org/abs/2309.00578>

S. Bhamidi, D. Patel\* and **V. Pipliras**, “Dynamic factor and VARMA models: equivalent representations, dimension reduction and nonlinear matrix equations.”

Arxiv: <https://arxiv.org/abs/2307.09974>

S. Bhamidi, D. Patel\*, **V. Pipliras** and G. Wu, “Correlation networks, dynamic factor models and community detection.”

Arxiv: <https://arxiv.org/abs/2307.09970>

M.-C. Düker and **V. Pipliras**, “Testing for common structures in high-dimensional factor models.”

Arxiv: <https://arxiv.org/abs/2403.19818>

E. H. Choi, J. Kaur, **V. Pipliras**, N. Gomes and Q. Hong, “Confidence driven classification of application types in the presence of background network traffic”

N. Gomes, Q. Hong, **V. Pipliras**, J. Kaur and E. H. Choi, “Statistical and deep learning classification sketches”

## Computer Code

Code or links to code for some papers are posted at <https://pipiras.web.unc.edu/code/>

## Teaching

University of North Carolina at Chapel Hill:

Undergraduate Teaching:

Stor 120 - Foundations of Statistics and Data Science (2 times)

Stor 155 - Introduction to Statistics (8+ times)

Stor 435 - Introduction to Probability Theory (10+ times)

Stor 556 - Time Series Data Analysis (5 times)

Graduate Teaching:

Stor 634 - Measure and Integration Theory (4 times)

Stor 635 - Probability Theory (2 times)

Stor 754 - Time Series and Multivariate Analysis

Stor 831 - Advanced Probability: Weak Convergence, Empirical Processes

Stor 836 - Stochastic Analysis

Stor 890 - Special Topics: Topics in Time Series Analysis

Stor 890 - Special Topics: High-Dimensional Time Series (3 times)

Stor 891 - Special Topics: Wavelets in Statistics and Probability

Stor 891 - Special Topics: Long-Range Dependence and Self-Similarity (2 times)

Boston University:

Probability seminar, a series of lectures on “Stable non-Gaussian processes and their connection to non-singular flows” (Fall, 2001); Probability seminar, a series of lectures on “Fractional calculus and its connections to fractional Brownian motion” (Spring 2000)

## Post Docs

- Z. Fisher (2020-2021), through Carolina Population Center, jointly with K. Bollen (Psychology and Neuroscience) and R. Hummer (Sociology). Topic: multiple subject high-dimensional time series. Started as Assistant Professor at Penn State University

## Ph.D. Students

Sole advisor:

- P. Andreou (started in Spring 2024). Dissertation topics: network time series
- M. Kim (started in Fall 2022). Dissertation topics: multi-fidelity and reduced-order modeling, uncertainty quantification
- Y. Kim (graduated in Spring 2023, started as PostDoc at Cornell University). Dissertation topics: multiple subject high-dimensional time series; categorical high-dimensional time series
- D. Glotzer (graduated in Spring 2018, started as Assistant Professor at Meredith College). Dissertation topics: extreme value analysis and uncertainty quantification with applications to ship motions
- S. Kechagias (graduated in Spring 2015, started and currently at SAS). Dissertation topics: multivariate long-range dependence and applications; simulation of multidimensional models and optimization
- R. Chaudhuri (graduated in Spring 2014, started at JPMorgan Chase, now at IBM New Dehli). Dissertation topics: semi-stable non-Gaussian laws arising in sampling of finite renewal processes; numerical evaluation of semi-stable densities
- C. Baek (graduated in Spring 2010, first Assistant Professor at Ohio University, now Professor at Sungkyunkwan University, Korea). Dissertation topics: heavy tails in random difference equations; long-range dependence and changes in mean
- G. Didier (graduated in Spring 2007, currently Associate Professor at Tulane University). Dissertation topics: adaptive wavelet decompositions; operator fractional Brownian motions

Co-advisor:

- D. Patel (graduated in Spring 2023, started at the IDA). Co-advised with Prof. S. Bhamidi. Dissertation topics: networks and time series
- B. Leinwand (graduated in Spring 2022, started as Assistant Professor at Stevens Institute of Technology). Co-advised with Prof. G. Wu. Dissertation topics: weighted dense networks; change points in correlation networks

## Other Ph.D. Students

- B. Massey, Computer Science student, RA under a grant, Fall 2024 to present. Topic: online classification of internet flows.

- E. H. Choi, Computer Science student, RA under a grant, Fall 2023 to present. Topic: classification of internet flows.
- P. Zouboulglou, RA under a grant, Spring, Fall 2022. Topic: cyclical long-range dependence.
- K. O'Connor, RA under a grant, Fall 2021. Topic: multi-fidelity methods.
- M.-C. Düker, visiting PhD student, Fall 2018 – Fall 2019, Ruhr-Universität Bochum. Topic: multivariate and high-dimensional long-range dependence.
- B. Brown, RA under a grant, Spring 2019 – Fall 2020. Topic: multi-fidelity methods.

Member of Ph.D. (excluding advisees) committees:

A. Sakanaveeti, M. Nisenzon, S. Kovach, H. Flury, P. Zouboulglou (2024), C. Urban (2024; Psychology and Neuroscience), C. Mosso (2023), A. Ye (2022; Psychology and Neuroscience), K. O'Connor (2021), Z. Fisher (2019; Psychology and Neuroscience), B. Brown (2021), M. He (2020), R. Fan (2020), S. Chakraborty (2018), Y. Liu (2017), E. Friedlander (2018), T. Henry (2017; Psychology and Neuroscience), X. Chen (2017), J. Jin (2017), R. Wu (2016), A. Majumder (2015), X. Wang (2014), J. Chen (2013), V. Maroulas (2008), M. Trovero (2007), F. Mitha (2003)

## M.Sc. Students

- I. Robson (single cell RNAseq time course data modeling, 2019/2020)
- K. Prakhya (dynamic covariance estimation; jointly with C. Ji, 2016/2017)
- S. Sarangi (option pricing with long memory; jointly with C. Ji, 2011/2012)

Several other MS students as part of the consulting course Stor 765: T. Henry (2016/2017), R. Scott (2013/2014), J. Liu (2012/2013), T. Xu (2011/2012). MS essay reader/Committee for: K. Cai (2022), S. Booth (2022), J. Zappa (2015), K. Ward (2004)

## Undergraduate Honors and Research Projects

- D. Kofman (neuropixels data, Fall 2025)
- C. Vita (neuropixels data, Fall 2023)
- R. Carpenter (neuropixels data, Spring 2023, Fall 2023)
- D. Cui (neural networks and time series, Fall 2022)
- T. Pham (neural networks and time series, Fall 2020)
- M. Gampe (change points in fMRI, Fall 2018, Spring 2019)
- R. West (financial time series, Fall 2018)
- Y. Zhou (time series analysis, Fall 2017)
- T. Guo (sampling of networks, Fall 2017, 2018, Spring 2019)
- E. Qian and K. Xie (spatio-temporal extremes, Spring 2017)
- B. Wang (sampling and streaming algorithms, Fall 2016)

- A. Katsevich (inference in high-dim. linear models, Fall 2014, Spring 2015)
- R. Wei (Bayesian computations, Fall 2013)
- Y. Wang (statistics in life insurance, Fall 2013)
- W. Boquist (multifractals, Spring 2013)
- X. Du (sampling in computer networks, Fall 2011)

Several other undergraduate students writing internship reports through Stor 493: Z. Chen (Best Practices, LLC; Summer, 2016), K. Gardner (Volvo Group; Spring, 2016), W. McDonald (Web Decisions; Summer, 2015), W. Zheng (Epic Games; Summer, Fall 2014), N. Ball (NC OMMISS; Spring 2013)

### **Service to the University at UNC**

Member of the Advisory Committee for School of Data Science and Society (2022 Fall)  
 Member of the Dean's advisory committee (2020 Fall-2022 Spring)  
 Member of the Chancellors Science Scholars Executive Advisory Board (2019 Fall-2024 Spring)  
 Member of a data science subcommittee for undergraduate education (2019 Fall)  
 Member of a task force for Curriculum 2019: Producing Citizen-Scholars (2017 Spring)  
 Member of the Administrative Board of the General College (2014-2017)  
 The Packard Fellowships for Science and Engineering internal reviewer for UNC-CH (2015)

### **Service to the Department at UNC**

Department chair (2019-2024)  
 Associate chair (2014-2016)  
 Director of undergraduate studies (2010-2016)  
 Hiring committees (2015-2016)  
 Colloquium committee (2016-2017, 2007-2008)  
 PTR committees (multiple)  
 Promotion committee (multiple)  
 Reappointment committee (multiple)  
 Mentoring committee (multiple)  
 Undergraduate studies committee (2016-2017)  
 Instructional mentoring committee (2016-2017)  
 Graduate studies committee (2006-2008)  
 Advisor for undergraduate program (2003-2008)  
 Teaching scheduling committee (2004-2008)  
 Library liaison (2002-2004)

### **Service to CEMAT, Portugal**

Responsible for the Probability and Statistics Seminar (2009-2010)

### **Professional Service**

2020-2024                      Serving on the Bernoulli Society Publication Committee

Assoc. Editor	<i>Lithuanian Mathematical Journal</i> (2019–2024) <i>Statistics: A Journal of Theoretical and Applied Statistics</i> (2020–2023) <i>Stochastic Processes and Their Applications</i> (2018–2021) <i>REVSTAT</i> (2014–2018) <i>Advances in Statistics</i> (2013–2014) <i>Journal of Probability and Statistics</i> (2013–2014)
Twice	Serving on Statistics grants review panel at National Science Foundation (NSF)
Once	Serving on CAREER grants review panel at National Science Foundation (NSF)
Twice	Serving on Probability and Statistics grants review panel at National Security Agency (NSA)
Other	Reviewer for: US promotion cases (6) French habilitation theses (1) Portuguese habilitation theses (1) Chinese promotion cases (1)

## Meeting and Session Organization

2025 June	Co-organizer of the 14th International Conference on Extreme Value Analysis (EVA 2025), University of North Carolina, Chapel Hill
2025 June	Organizer of a session “Extremes, Dynamical Systems and Multi-Fidelity” in the 14th International Conference on Extreme Value Analysis (EVA 2025), University of North Carolina, Chapel Hill
2024 December	Organizer of a session “High-dimensional time series and data integration” in the 18th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CM-Statistics), CFE-CMStatistics 2024, King’s College London
2023 February	Co-organizer of a 1-day meeting “A Celebration in Memory of Ross Leadbetter: Extremes, Dependence, and More”, University of North Carolina, Chapel Hill
2020 October	Co-organizer of a 5-day meeting on “Statistical modeling for large complex time dependent systems”, Banff International Research Station, Canada (canceled due to the pandemic)
2018	On the program committee of joint 2018 IMS Annual Meeting and 12th International Vilnius Conference on Probability Theory and Mathematical Statistics, Vilnius, Lithuania
2014 February	Co-organizer of a 5-day meeting on “Multifractal analysis: from theory to applications and back”, Banff International Research Station, Canada
2013, 2014, 2015	UNC organizer of DataFest2013, 2014, 2015, an undergraduate competition in data analysis. Web: <a href="http://stat.duke.edu/datafest">http://stat.duke.edu/datafest</a>
2012 April	Co-organizer of “International conference on long-range dependence, self-similarity and heavy tails”, Research Triangle Park, North Carolina, USA. Web: <a href="http://lrd2012.web.unc.edu/">http://lrd2012.web.unc.edu/</a>

## Professional Affiliations

IMS, Bernoulli Society

## Consulting

U.S. Navy (2015)

Law firm (2020)

## Referee for

Book proposals (Multiple times for several of these publishers):  
Chapman & Hall/CRC Press, Elsevier, Springer, World Scientific

Workshop proposals:

BIRS

Grant agencies (Multiple times for a number of these agencies):

Army Research Office (ARO)

Israel Science Foundation (ISF)

National Science Agency (NSA)

Netherlands Organisation for Scientific Research (NWO)

Wallenberg Foundation, Royal Swedish Academy of Sciences

Book chapters:

Contemporary ideas for ship stability (2018, Elsevier)

Journals (Multiple times for a number of these journals):

The Annals of Applied Probability, The Annals of Probability, The Annals of Statistics, Applied and Computational Harmonic Analysis, Applied Mathematical Modeling, Applied Ocean Research, Applied Probability, Bernoulli, Brazilian Journal of Probability and Statistics, Bulletin of the Iranian Mathematical Society, Constructive Approximation, EBP volume, Econometric Theory, Electronic Communications in Probability, Electronic Journal of Probability, Electronic Journal of Statistics, Extremes, FITraMEn 2008, High Frequency, IEEE Transactions on Information Theory, IEEE Transactions on Signal Processing, Imaging Neuroscience, International Journal of Offshore and Polar Engineering, ITISE 2017, Journal of Applied Statistics, International Journal of Statistics and Management Systems, Journal of American Statistical Association, Journal of Applied Probability, Journal of Computational and Graphical Statistics, Journal of Econometrics, Journal of Financial Econometrics, Journal of Fourier Analysis and Applications, Journal of Integral Equations, Journal of Machine Learning Research, Journal of Mathematical Analysis and Applications, Journal of Multivariate Analysis, Journal of Selected Topics in Signal Processing, Journal of Stochastic Analysis and Applications, Journal of Theoretical Probability, Mathematics of Operations Research, Mathematical Problems in Engineering, Ocean Engineering, Physica D: Nonlinear Phenomena, Potential Analysis, Probability and Mathematical Statistics, Probability Theory and Related Fields, Proceedings of the American Mathematical Society, Proceedings of the Royal Society A, Psychometrika, Quantitative Finance, Queueing Systems, REVSTAT Statistical Journal, Rocky Mountain Journal of Mathematics, SIAM Journal of Numerical Analysis, SIAM Journal on Scientific Computing, SIAM/ASA Journal on Uncertainty Quantification, SPE2011, Signal Processing, Statistical Science, Stochastic Models, Stochastic Processes and Their Applications, Stochastics, Statistics and Probability Letters, Statistica Sinica, Turkish Journal of Mathematics

## Talks and Poster Presentations since 2002

- “Non-Gaussianity, discretization and their consequences for uncertainty quantification in Longuet-Higgins model of random waves”, Intl. Congress of the International Maritime Association of the Mediterranean, and Intl. Ship Stability Workshop, Crete, Greece, September, 2025

- “On physics-informed statistical reduced-order model for response and peaks of ship vertical bending moment in irregular waves”, Intl. Congress of the International Maritime Association of the Mediterranean, and Intl. Ship Stability Workshop, Crete, Greece, September, 2025
- “Explaining issues with uncertainty quantification for Longuet-Higgins model of random waves”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, June, 2025
- “Recent encounters of cyclical long memory”, Conference on Periodically Correlated Processes, Chapel Hill, March, 2025
- “Testing for common structures in high-dimensional factor models”, International Conference on Statistics and Data Science, Nice, France, December, 2024
- “Multivariate count time series modeling through latent Gaussian processes”, Cornell University, October, 2024
- “Parametric multi-fidelity estimation with applications to extremes”, Mathematisches Forschungsinstitut Oberwolfach, Germany, August, 2024
- “Correlation networks, dynamic factor models and community detection”, Bernoulli-IMS World Congress, Bochum, Germany, August, 2024
- “Effect of slamming events on the statistics of the vertical bending moment”, 35th Symposium on Naval Hydrodynamics (SNH), Nantes, France, July, 2024
- “Statistical reduced-order modeling of peaks of vertical bending moment in irregular waves”, 35th Symposium on Naval Hydrodynamics (SNH), Nantes, France, July, 2024
- “Modeling of high-dimensional time series for multiple subjects”, BIRS-CMO, Oaxaca, Mexico, May, 2024
- “Modeling of high-dimensional time series for multiple subjects”, UNC Psychology and Neuro-Science Quant Forum, April, 2024
- “Modeling of high-dimensional time series for multiple subjects”, International Conferences on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics), Berlin, Germany, December, 2023
- “High-dimensional latent Gaussian count time series: Concentration results for autocovariances and applications”, NBER-NSF Time Series Conference, Montreal, Canada, September, 2023 (Poster)
- “Longuet-Higgins wave model and ARMA representations,” Istanbul, Turkey, September, 2023 (Zoom talk)
- “Modeling of high-dimensional time series for multiple subjects”, Joint Statistical Meetings, Toronto, Canada, August, 2023
- “Longuet-Higgins wave model and ARMA representations”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, August, 2023
- “Sampling low-fidelity outputs for estimation of high-fidelity density and its tails”, Extreme Value Analysis Conference, Milano, Italy, June, 2023
- “Some extreme value problems arising with ship motions”, Meeting in celebration of M. R. Leadbetter, UNC–Chapel Hill, February, 2023

- “Multivariate count (ordinal) time series modeling through latent Gaussian processes”, Virtual Time Series Seminars, December, 2022 (Zoom talk)
- “Correlation networks, dynamic factor models and community detection”, NBER-NSF Time Series Conference, Boston University, September, 2022
- “Cyclical long memory in ship motions at non-zero forward speed”, Intl. Ship Stability Workshop, Gdansk, Poland, September, 2022
- “A physical model with cyclical long-range dependence”, NSF/CBMS Conference: Gaussian Random Fields, Fractals, SPDEs, and Extremes, University of Alabama in Huntsville, August, 2022 (Zoom talk)
- “Cyclical long memory in ship motions at non-zero forward speed”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, August, 2022
- “Multi-fidelity uncertainty quantification and reduced-order modeling for extreme ship motions and loads”, 34th Symposium on Naval Hydrodynamics (SNH), Washington DC, June, 2022
- “Multifidelity Monte Carlo estimation for extremes through extrapolation distributions”, Mechanistic Machine Learning and Digital Twins for Computational Science, Engineering & Technology (MMLDT-CSET), September, 2021 (Zoom talk)
- “Multivariate integer-valued time series with flexible autocovariances and their application to major hurricane counts”, Joint Statistical Meetings, August, 2021 (Zoom talk)
- “Some extreme value problems arising with ship motions”, NSF/CBMS Conference: Gaussian Random Fields, Fractals, SPDEs, and Extremes, University of Alabama in Huntsville, August, 2021 (Zoom talk)
- “Cotrending: testing for common deterministic trends in varying means model”, Bernoulli-IMS 10th World Congress in Probability and Statistics, Seoul, Korea, July, 2021 (Zoom talk)
- “Some multi-fidelity questions for ship motion programs”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, July, 2021 (Zoom talk)
- “Multifidelity Monte Carlo estimation for extremes through extrapolation distributions”, Extreme Value Analysis, June, 2021 (Zoom talk)
- “Calibrating multifidelity ship motion codes through regression”, 1st International Conference on the Stability and Safety of Ships and Ocean Vehicles, June, 2021 (Zoom talk)
- “Sampling-based estimation of in-degree distribution in directed complex networks”, University of North Carolina, Chapel Hill, November, 2020 (Zoom talk)
- “Statistical analysis of extreme ship loads: Physical distribution tails, limitations of data-driven approaches and model uncertainty”, 33rd Symposium on Naval Hydrodynamics (SNH), October, 2020 (Zoom talk)
- “Asymptotic results for multivariate local Whittle estimation with applications”, IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Guadeloupe, West Indies, December, 2019
- “Gaussian copula vector autoregressive modeling”, Joint Statistical Meetings, Denver, July, 2019
- “Linear regression: the old, the new and applications in Naval Architecture”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, July, 2019

- “Pitfalls of data-driven peaks-over-threshold analysis: perspectives from extreme ship motions”, International Conference on Extreme Value Analysis, Zagreb, Croatia, July, 2019
- “On extending multifidelity uncertainty quantification methods from non-rare to rare problems”, Intl. Ship Stability Workshop, Helsinki, Finland, June, 2019
- “Eigenstructure description and testing in stationary subspace analysis”, UC Davis, February, 2019
- “Sampling-based estimation of in-degree distribution in directed complex networks”, George Mason University, November, 2018
- “Sampling-based estimation of in-degree distribution in directed complex networks”, Michigan State University, November, 2018
- “Asymptotics of bivariate local Whittle estimators with some applications”, AMS meeting, University of Michigan, October, 2018
- “Latent Gaussian count time series modeling”, Poster, NBER-NSF Time Series Conference, UC San Diego, 2018
- “Data-driven quantification of model uncertainty”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, August, 2018
- “Latent Gaussian count time series modeling”, Poster, 12th International Vilnius Conference on Probability Theory and Mathematical Statistics and 2018 IMS Annual Meeting on Probability and Statistics, Vilnius, Lithuania, July, 2018
- “Small and large scale behavior of moments of Poisson cluster processes”, Conference in honor of Prof. D. Surgailis, Vilnius, Lithuania, July, 2018
- “Asymptotics of bivariate local Whittle estimators with some applications”, CMO, Oaxaca, Mexico, June, 2018
- “Several aspects of modeling univariate and multivariate periodic time series”, Census Bureau, May, 2018
- “Some extreme value problems arising with ship motions”, American University, April, 2018
- “Sampling and inversion methods in several “big data” applications”, Columbia University, April, 2018
- “Estimating probabilities of extreme values and rare events with applications in Naval Architecture”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, March, 2018
- “Some extreme value problems arising with ship motions”, Texas A&M University, March, 2018
- “Chasing change points in an fMRI data set”, UNC Psychology and Neuroscience Quant Forum, October, 2017
- “Statistical perspectives on some problems arising in Naval Engineering”, the 30th American Towing Tank Conference, Bethesda, October, 2017
- “Some extreme value problems arising with ship motions”, MIT, September, 2017
- “Periodic dynamic factor models: estimation approaches and applications”, Poster, NBER-NSF Time Series Conference, Northwestern University, September, 2017

- “Distributions and extreme value analysis of critical response rate and split-time metric in non-linear random oscillators”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, August, 2017
- “Semiparametric, parametric and possibly sparse models for multivariate long-range dependence”, SPIE: Wavelets and Sparsity XVII, San Diego, August, 2017
- “Semiparametric, parametric and possibly sparse models for multivariate long-range dependence”, Joint Statistical Meetings, Baltimore, August, 2017
- “Semiparametric, parametric and possibly sparse models for multivariate long-range dependence”, European Meeting of Statisticians, Helsinki, Finland, July, 2017
- “A bivariate long-range dependent time series model with general phase”, Indiana University, AMS Sectional Meeting, April, 2017
- “Sparse seasonal and periodic vector autoregressive modeling”, Sungkyunkwan University, Korea, October, 2016
- “A bivariate long-range dependent time series model with general phase”, University of Cincinnati, September, 2016
- “Sparse seasonal and periodic vector autoregressive modeling”, Joint Statistical Meetings, Chicago, August, 2016
- “Statistical uncertainty and stochastic dynamics questions related to ship motions in irregular seas”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, July, 2016
- “Bivariate long-range dependent time series models with general phase”, Recent developments in statistics for complex dependent data, Loccum, Germany, August, 2015
- “Extreme values of response of dynamical systems akin to ship motions”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, July, 2015
- “Bivariate long-range dependent time series models with general phase”, IISER Time Series Conference, Pune, India, May, 2015
- “On circulant matrix embeddings in synthesis of stationary Gaussian fields”, AMS meeting at Michigan State University, March, 2015
- “Quadratic programming in synthesis of stationary Gaussian fields”, Clemson University, November, 2014
- “Quadratic programming in synthesis of stationary Gaussian fields”, Boston University, November, 2014
- “Estimating exceedance probabilities for extreme ship motions in irregular waves”, David Taylor Model Basin - NSWCCD, Bethesda, Maryland, July, 2014
- “Definitions and representations of multivariate long-range dependent series”, the workshop on “Recent Advances and Trends in Time Series Analysis: Nonlinear Time Series, High Dimensional Inference and Beyond”, the Banff International Research Station, April, Canada, 2014
- “Definitions and representations of multivariate long-range dependent series”, NBER-NSF Time Series Conference, Federal Reserve, Washington DC, September, 2013
- “On distinguishing multiple changes in mean and long-range dependence using local Whittle estimation”, Triangle Econometrics Conference, Research Triangle Park, North Carolina, December, 2012

- “On distinguishing multiple changes in mean and long-range dependence using local Whittle estimation”, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, University of North Carolina at Greensboro, October, 2012
- “Smoothing windows for the synthesis of Gaussian stationary random fields using circulant matrix embedding”, Portuguese Mathematical Society Meeting, Algarve, Portugal, July, 2012
- “On distinguishing multiple changes in mean and long-range dependence using local Whittle estimation”, International Workshop on Applied Probability, Jerusalem, Israel, June, 2012
- “Adaptive wavelet decompositions of stochastic processes and some applications”, Multifractal Analysis Seminar, Universite Paris-Est Creteil, France, May, 2012
- “Smoothing windows for the synthesis of Gaussian stationary random fields using circulant matrix embedding”, Poster, International Conference on Long-Range Dependence, Self-Similarity and Heavy Tails, Research Triangle Park, North Carolina, April, 2012
- “Statistical tests for changes in mean against long-range dependence”, University of North Carolina, Econometrics Seminar, Department of Economics, March, 2011
- “Synthesis of Gaussian and non-Gaussian stationary time series using circulant matrix embedding”, University of North Carolina, Internal Seminar, Department of Statistics and OR, November, 2010
- “Physical models for long-range dependence”, Banff International Research Station, Canada, Meeting on “The Mathematical Genesis of the Phenomenon called  $1/f$  noise”, June, 2010
- “Probabilistic sampling of finite renewal processes”, SPE (Portuguese Statistical Society) Meeting, Sesimbra, Portugal, October, 2009
- “Operator fractional Brownian motions”, Poster, International Conference on Self-Similar Processes and their Applications, Angers, France, July, 2009
- “Second order properties of distribution tails and estimation of tail exponents in random difference equations”, Poster, SETA (Spatial Extremes, Theory and Applications) conference, Lisbon, Portugal, April, 2009
- “Estimation of matrix rank: historical overview and more recent developments”, UTL Probability and Statistics Seminar, Lisbon, Portugal, October, 2008
- “Adaptive wavelet decompositions of stationary (Gaussian) processes”, Poster, NBER-NSF 2008 time series conference, Aarhus, Denmark, September, 2008
- “Heavy traffic approximations in a queueing system with random service rates: the case of heavy-tailed or long range dependent arrivals”, Poster, Stochastic Networks Conference, Paris, France, June, 2008
- “Some research problems on long range dependence”, Probability and Statistics Seminar, Instituto Superior Técnico, Technical University of Lisbon, Portugal, October, 2007
- “Adaptive wavelet decompositions of stationary time series”, Probability Seminar, University of Tennessee at Knoxville, March, 2007
- “Adaptive wavelet decompositions of stationary time series”, Statistics Seminar, University of Michigan, February, 2007
- “Adaptive wavelet decompositions of stationary time series”, Statistics Seminar, Clemson University, February, 2007

- “Stable stationary processes related to periodic and cyclic flows”, The 9th International Vilnius Conference on Probability Theory and Mathematical Statistics, Vilnius, Lithuania, June, 2006
- “Adaptive wavelet decompositions of stationary (Gaussian) processes”, Poster, Graybill Conference, Multiscale Methods & Statistics: A Productive Marriage, Colorado State University, June, 2006
- “Adaptive wavelet decompositions of stationary time series”, ENS Lyon, France, May, 2006
- “Wavelet-based expansion and simulation of fractional Brownian motion”, Workshop on Stochastic Analysis, University of Jyväskylä, Finland, May, 2005
- “Wavelet-based expansion and simulation of fractional Brownian motion”, Workshop on Heavy Tails and Long Range Dependence, Cornell University, April, 2005
- “Wavelet-based synthesis of the Rosenblatt process” and “Identification of periodic and cyclic fractional stable motions”, SAMSI, Network Modeling for the Internet, Closing Workshop, June, 2004
- “Wavelet-based simulation of fractional Brownian motion revisited”, Second International Conference on Computational Harmonic Analysis, Vanderbilt University, Nashville, May, 2004
- “Stable stationary processes related to periodic and cyclic flows”, Fifth Biennial IISA International Conference on Statistics, Probability and Related Areas, University of Georgia, Athens, May, 2004
- “Wavelet-based simulation of fractional Brownian motion revisited”, Conference on Recent Developments in Applied Harmonic Analysis: Multiscale Geometric Analysis, University of Arkansas, Fayetteville, April, 2004
- “The structure of stable self-similar processes with stationary increments”, Department of Statistics and Operations Research, University of Lisbon, Portugal, October, 2003
- “Stable self-similar processes with stationary increments”, Mathematics Department, North Carolina State University, April, 2003
- “Wavelet decompositions and their use in simulation of self-similar processes”, Statistics Department, University of North Carolina at Chapel Hill, April, 2003
- “Wavelet-based estimation of parameters in scaling processes”, Teletraffic Group Meeting, University of North Carolina at Chapel Hill, November, 2002
- “Stable self-similar processes with stationary increments”, The 24th European Meeting of Statisticians, Prague, Czech Republic, August, 2002

## **Computing and Statistical Software**

MATLAB, R, Python

## **Languages**

Lithuanian, English, Portuguese, French, Russian

*Date: September, 2025*