

Short CV with publications

PERSONAL DATA

Name: **Sonia Migliorati**

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EDUCATION

Laurea (M. Sc.) in Economics (1991), University of Brescia, Italy

Ph. D. in Statistics (1994), University of Trento, Italy

ACADEMIC RECORD

1996-2000: Assistant Professor of Statistics, University of Milano (1996-1998) and University of Milano-Bicocca (1998-2000), Italy

2000-2005: Associate Professor of Statistics, Department of Statistics, University of Milano-Bicocca, Italy

2005- 2012: Professor of Statistics, Department of Statistics, University of Milano-Bicocca, Italy

2012-present: Professor of Statistics, Department of Economics, Management and Statistics (DEMS), University of Milano-Bicocca, Italy

TEACHING EXPERIENCE

Multivariate statistics, statistical models, Bayesian statistics, and computational statistics.

OTHER ACTIVITIES

Coordinator of the Bachelor's Degree Program in Statistics and Information Management (2005-2011), Chair of the Academic Board of the Bachelor's and Master's Degree Programs in Statistical and Economic Sciences (2016-2019), member of the Academic Senate (2021-2024), Vice Rector for Orientation and Placement (2025-present).

MAIN RESEARCH INTERESTS

Statistical models, Bayesian inference, computational statistics.

RECENT PUBLICATIONS

Peer-reviewed journal articles (in reverse chronological order)

(2025) Ascari, R., Migliorati, S., Ongaro, A. "A New Dirichlet-Multinomial Mixture Regression Model for the Analysis of Microbiome Data", *Statistics in Medicine*, 44.

- (2025) Giampino, A., Ascari, R., Migliorati, S. “A flexible mixed-membership model for community and enterotype detection for microbiome data”, *Computational Statistics & Data Analysis*, 210.
- (2024) Ongaro, A., Migliorati, S., Ascari, R., Ripamonti, E. “Testing practical relevance of treatment effects”, *Statistical Papers*, 65(7), 4121-4145.
- (2024) Ascari, R., Di Brisco, A., Migliorati, S., Ongaro, A. “A Multivariate Mixture Regression Model for Constrained Responses”, *Bayesian Analysis*, 19(2), 377-405 [10.1214/22-BA1359].
- (2024) Gerli, S., Ascari, R., Migliorati, S., Cigna, T., Borrotti, M. “Beyond human labelling: an automatic topic identification framework for big web data”, *Electronic Journal of Applied Statistical Analysis*, 17(3).
- (2023) Di Brisco, A., Bongiorno, E., Goia, A., Migliorati, S. “Bayesian flexible beta regression model with functional covariate”, *Computational Statistics*, 38(2), 623-645 [10.1007/s00180-022-01240-5].
- (2021) Ascari, R.; Migliorati, S. “A new regression model for overdispersed binomial data accounting for outliers and an excess of zeros”, *Statistics in Medicine*, DOI: <https://dx.doi.org/10.1002/sim.9005>.
- (2021) Migliorati, S., Monti, G., Vighi, M. “Ecological hazard assessment via species sensitivity distributions: The non-exchangeability issue”, *Biometrical Journal*, 63(4), 875-892 [10.1002/bimj.201900404].
- (2021) Di Brisco, A., Migliorati, S. “A spatial mixed-effects regression model for electoral data”, *Statistical methods & Applications*, 30(2), 543-571 [10.1007/s10260-020-00534-6].
- (2021) Oliveira dos Anjos, T., Polazzo, F., Arenas-sánchez, A., Cherta, L., Ascari, R., Migliorati, S., et al. “Eutrophic status influences the impact of pesticide mixtures and predation on *Daphnia pulex* populations”, *Ecology and Evolution*, 11(9), 4046-4057 [10.1002/ece3.7305].
- (2020) Ongaro, A., Migliorati, S., Ascari, R. “A new mixture model on the simplex”, *Statistics and Computing*, 30(4), 749-770 [10.1007/s11222-019-09920-x].
- (2020) Di Brisco, A., Migliorati, S., Ongaro, A. “Robustness against outliers: A new variance inflated regression model for proportions”, *Statistical Modelling*, 20(3), 274-309 [10.1177/1471082X18821213].
- (2020) Di Brisco, A., Migliorati, S. “A new mixed-effects mixture model for constrained longitudinal data”, *Statistics in Medicine*, 39(2), 129-145 [10.1002/sim.8406].
- (2018) Migliorati, S., Di Brisco, A., Ongaro, A. “A new regression model for bounded responses”, *Bayesian Analysis*, 13(3), 845-872 [10.1214/17-BA1079].
- (2017) Scarduelli, L; Giacchini, R; Parenti, P; Migliorati, S; Di Brisco, A; Vighi, M. “Natural variability of biochemical biomarkers in the macro-zoobenthos: Dependence on life stage and environmental factors”, *Environmental Toxicology and Chemistry*, DOI:10.1002/etc.3893.

- (2016) Migliorati, S., Ongaro, A., & Monti G.S. “A structured Dirichlet mixture model for compositional data: inferential and applicative issues”, *Statistics and Computing*, DOI: 10.1007/s11222-016-9665-y.
- (2016) Villa, S; Migliorati, S; Monti, G; Holoubek, I; Vighi, M. “Risk of POP mixtures on the Arctic food chain”, *Environmental Toxicology and Chemistry*, DOI:10.1002/etc.3671.
- (2015) Monti, G.S., Migliorati, S., Hron, K., Hřůzová, K., & Fišerová, E. “Log-ratio approach in curve fitting for concentration-response experiments”, *Environmental and Ecological Statistics* 22 (2), 275-295.
- (2013) Ongaro, A., & Migliorati, S. “A generalization of the Dirichlet distribution”, *Journal of Multivariate Analysis*, 114, 412-426.
- (2012) Villa, S., Migliorati, S., Monti, G.S., & Vighi, M. “Toxicity on the luminescent bacterium *Vibrio fischeri* (Beijerinck). II: Response to complex mixtures of heterogeneous chemicals at low levels of individual components”, *Ecotoxicology and Environmental Safety*, 86, 93-100.
- (2012) Sala, S., Migliorati, S., Monti, G.S., & Vighi M “SSD-based rating system for the classification of pesticide risk on biodiversity”, *Ecotoxicology*, 21(4), 1050-1062.
- (2009) Vighi, M., Migliorati, S., & Monti, G.S. “Toxicity on the luminescent bacterium *Vibrio Fischeri* (Beijerinck). I: QSAR equation for narcotics and polar narcotics”, *Ecotoxicology and Environmental safety*, 72(1), 154-161.
- (2009) Marasini, D., & Migliorati, S. “On the use of inferential confidence intervals”, *Statistica e Applicazioni*, 7(1), 3-14.
- (2006) Marasini, D., & Migliorati, S. “Combining information from several groups in estimating characteristics of immigrant people”, *Statistical Methods & Applications*, 15(1), 107-127.
- (2003) Mecatti, F., Migliorati, S. “Center Sampling: a strategy for elusive population surveys”, *Statistica*, 43(3), 537-560.
- (2002) Migliorati, S. “Uniformly most powerful tests for two-sided hypotheses”, *Metron*, 60(1-2), 107-114.
- (1998) Migliorati, S. “Order statistics as minimal sufficient statistics”, *Communications in Statistics. Theory and Methods*, 27(12), 2943-2951 [10.1080/03610929808832265].

Several book chapters and conference proceedings