

# Liste de publications de MATH

## Articles dans des revues avec comité de lecture

### A paraître

Bertelson, M., & Meigniez, G. G. (2023). Conformal Symplectic structures, Foliations and Contact Structures. *Journal of symplectic geometry*, 40.

Bonheure, D., & Galdi, G. P. (2024). Global Weak Solutions to a Time-Periodic Body-Liquid Interaction Problem. *Annales de l'Institut Henri Poincaré. Analyse non linéaire.*, To appear.

Bernard, G., & Verdebout, T. (2024). Power enhancement for dimension detection of Gaussian signals. *Statistica sinica*.

Hallin, M., Liu, H., & Verdebout, T. (2024). Nonparametric Measure-transportation-based Methods for Directional Data. *Journal of the Royal Statistical Society. Series B. Methodological*.

Leemans, D., & Toledo Roy, M. A. (2024). Faithful and thin non-polytopal maniplexes. *Ars Mathematica contemporanea*.

Leemans, D., Stokes, K., & Tranchida, P. A. (2024). On trialities and their absolute geometries. *Advances in geometry*.

Cameron, P., Fernandes, M. E., & Leemans, D. (2024). The number of string C-groups of high rank. *Advances in mathematics*.

Anastasiou, A., Barp, A., Briol, F. X., Ebner, B., Gaunt, R., Ghaderinejad, F., Gorham, J., Ley, C., Liu, Q., Mackey, L., Reinert, G., & Swan, Y. (2022). Stein's Method Meets Statistics: A Review of Some Recent Developments. *Statistical science*.

Spenko, Š., & Van den Bergh, M. (2023). A class of perverse schobers in Geometric Invariant Theory. *Selecta mathematica, New series*.

Loris, I., & Rebegoldi, S. (2024). Convergence analysis of a primal-dual optimization-by-continuation algorithm. *Journal of computational and applied mathematics*.

### 2024

Bonheure, D., Galdi, G. P., & Gazzola, F. (2024). Stability of equilibria and bifurcations for a fluid-solid interaction problem. *Journal of differential equations*, 408, 324-367. doi:10.1016/j.jde.2024.07.007

Denuit, M., Huyghe, J., Trufin, J., & Verdebout, T. (2024). Testing for auto-calibration with Lorenz and Concentration curves. *Insurance. Mathematics & economics*, 117, 130-139. doi:10.1016/j.insmatheco.2024.04.003

Batista, E., Hautekiet, W., & Vercruyssen, J. (2024). A comonadicity theorem for partial comodules. *Quaestiones mathematicae*. doi:10.2989/16073606.2024.2322011

Grosskopf, P., & Vercruyssen, J. (2024). Free and co-free constructions for Hopf categories. *Journal of pure and applied algebra*, 228(10), 107704. doi:10.1016/j.jpaa.2024.107704

Berger, J., Saracco, P., & Vercruyssen, J. (2024). Everybody knows what a normal gabi-algebra is. *Advances in mathematics*, 451, 109797. doi:10.1016/j.aim.2024.109797

Berchio, E., Bonheure, D., Galdi, G. P., Gazzola, F., & Perotto, S. (2024). Equilibrium Configurations of a Symmetric Body Immersed in a Stationary Navier–Stokes Flow in a Planar Channel. *SIAM journal on mathematical analysis*, 56(3), 3759–3801. doi:10.1137/23M1568752

Bonheure, D., Casteras, J.-B., & Premoselli, B. (2024). Classification of radial blow-up at the first critical exponent for the Lin–Ni–Takagi problem in the ball. *Mathematische Annalen*. doi:10.1007/s00208-024-02888-8

Bhattacharya, S., Lefèvre, L., Chatzistergos, T., Hayakawa, H., & Jansen, M. (2024). RudolfWolf to AlfredWolf: The Transfer of the Reference Observer in the International Sunspot Number Series (1876–1893). *Solar physics*, 299, 45.

El Kaoutit, L., Ghobadi, A., Saracco, P., & Vercruyssen, J. (2024). Correspondence theorems for Hopf algebroids with applications to affine groupoids. *Canadian journal of mathematics*, 1-51. doi:10.4153/S0008414X23000238

Delbrouck, C., & Alonso Garcia, J. (2024). COVID-19 and Excess Mortality: An Actuarial Study. *Risks*, 12(4), 61. doi:10.3390/risks12040061

Wolf, F. L., Deelstra, G., & Grzelak, L. (2024). Consistent asset modelling with random coefficients and switches between regimes. *Mathematics and computers in simulation*, 223, 65–85. doi:10.1016/j.matcom.2024.03.021

Jansen, M. (2024). Information criteria for structured parameter selection in high dimensional tree and graph models. *Digital signal processing*, 148, 104437.

Saracco, P., & Vercruyssen, J. (2024). Geometric partial comodules over flat coalgebras in Abelian categories are globalizable. *Journal of pure and applied algebra*, 228(3), 107502. doi:10.1016/j.jpaa.2023.107502

De Saedeleer, J., Leemans, D., & Mulpas, J. (2024). A rank augmentation theorem for rank three string C-group representations of the symmetric groups. *Journal of algebraic combinatorics*, 59(2), 393–411. doi:10.1007/s10801-023-01291-x

García-Portugués, E., Lafaye De Micheaux, P., Meintanis, S., & Verdebout, T. (2024). Nonparametric tests of independence for circular data based on trigonometric moments. *Statistica sinica*, 34, 567–588.

Bernard, G., & Verdebout, T. (2024). On testing the equality of latent roots of scatter matrices under ellipticity. *Journal of Multivariate Analysis*, 199, 105232. doi:10.1016/j.jmva.2023.105232

Duerinckx, M., Gloria, A., & Ruf, M. (2024). Un ansatz spectral pour l'homogénéisation de l'équation des ondes en temps long. *Journal de l'Ecole Polytechnique - Mathématiques*, 11, 523-587. doi:10.5802/JEP.259

Alonso Garcia, J., Sherris, M., Thirurajah, S., & Ziveyi, J. (2024). Taxation and policyholder behavior: the case of guaranteed minimum accumulation benefits. *ASTIN bulletin*, 1-28. doi:10.1017/asb.2023.38

## 2023

Betten, A., Leemans, D., Muhlherr, B., Parkinson, J., Thas, K., & van Maldeghem, H. (2023). Preface [In memoriam: Jacques Tits]. *Innovations in Incidence Geometry*, 20(2-3), 63-64.

Claeskens, G., & Jansen, M. (2023). Comments on: Statistical inference and large-scale multiple testing for high-dimensional regression models. *Test*, 32(4), 1177-1179. doi:10.1007/s11749-023-00896-5

Simon, P.-A., Trufin, J., & Denuit, M. (2023). Bivariate Poisson credibility model and bonus-malus scale for claim and near-claim events. *North American actuarial journal*.

Gireg, W., Trufin, J., & Denuit, M. (2023). Boosted Poisson regression trees: A guide to the BT package in R. *Annals of Actuarial Science*.

Bienek, T., Deelstra, G., Lichtenstern, A., & Zagst, R. (2023). A multi-curve HJM factor model for pricing and risk management. *Quantitative finance*, 23(11), 1659-1675. doi:10.1080/14697688.2023.2251179

Aprile, M., Drescher, M., Fiorini, S., & Huynh, T. (2023). A  $7/3$ -approximation algorithm for feedback vertex set in tournaments via Sherali-Adams. *Discrete applied mathematics*, 337, 149-160. doi:10.1016/j.dam.2023.04.016

Bonheure, D., & Iacopetti, A. (2023). A Sharp Gradient Estimate and  $W^{2,q}$  Regularity for the Prescribed Mean Curvature Equation in the Lorentz-Minkowski Space. *Archive for rational mechanics and analysis*, 247(5). doi:10.1007/s00205-023-01910-8

Huyghe, J., Trufin, J., & Denuit, M. (2023). Boosting cost-complexity pruned trees on Tweedie responses: the ABT machine for insurance ratemaking. *Scandinavian actuarial journal*, 1-23. doi:10.1080/03461238.2023.2258135

Leemans, D., & Stokes, K. (2023). Incidence geometries with trialities coming from maps with Wilson trialities. *Innovations in Incidence Geometry*, 20(2-3), 325-340.

McKeague, I. I., & Swan, Y. (2023). Stein's method and approximating the multidimensional quantum harmonic oscillator. *Journal of Applied Probability*, 60(3), 855-873. doi:10.1017/jpr.2022.125

Duerinckx, M., & Gloria, A. (2023). The Clausius-Mossotti formula. *Asymptotic analysis*, 134(3-4), 437-453.

Denuit, M., & Trufin, J. (2023). Model selection with Pearson's correlation, concentration and Lorenz curves under autocalibration. *European Actuarial Journal*, 13, 871-878.

Deelstra, G., & Hieber, P. (2023). Randomization and the valuation of guaranteed minimum death benefits. *European journal of operational research*, 309(3), 1218-1236. doi:10.1016/j.ejor.2023.01.059

McKeague, I. I., & Swan, Y. (2023). Stein's method and approximating the multidimensional quantum harmonic oscillator. *Journal of Applied Probability*.

Swan, Y., & Germain, G. (2023). A note on one-dimensional Poincaré inequalities by Stein-type integration. *Bernoulli*, 29(2), 1714-1740.

Anastasiou, A., Barp, A., Briol, F. X., Ebner, B., Gaunt, R., Ghaderinezhad, F., Gorham, J., Gretton, A., Ley, C., Liu, Q., Mackey, L., Oates, C. C., Reinert, G., & Swan, Y. (2023). Stein's Method Meets Computational Statistics: A Review of Some Recent Developments. *Statistical science*, 38(1), 120-139. doi:10.1214/22-STS863

Claeskens, G., Jansen, M., & Zhou, J. (2023). Discussion on: "A scale-free approach for false discovery rate control in generalized linear models" by Dai, Lin, Zing, Liu. *Journal of the American Statistical Association*, 118(543), 1573-1577.

Xu, M., Alonso Garcia, J., Sherris, M., & Shao, A. W. (2023). Insuring longevity risk and long-term care: Bequest, housing and liquidity. *Insurance. Mathematics & economics*, 111, 121-141. doi:10.1016/j.insmatheco.2023.03.004

Sinner, C., Dominicy, Y., Trufin, J., Waterschoot, W., Weber, P., & Ley, C. (2023). From Pareto to Weibull – A Constructive Review of Distributions on  $\mathbb{R}^+$ . *International statistical review*, 91(1), 35-54. doi:10.1111/insr.12508

Leemans, D., & Toledo Roy, M. A. (2023). Maniplexes with automorphism group  $PSL(2, q)$ . *Discrete mathematics*, 346(9), 113527.

Bordemann, M., Elchinger, O., Gutt, S., & Makhlof, A. (2023).  $L_\#$ -formality check for the Hochschild complex of certain universal enveloping algebras. *Journal of geometry and physics*, 187, 104789. doi:10.1016/j.geomphys.2023.104789

Germain, G., & Swan, Y. (2023). A note on one-dimensional Poincaré inequalities by Stein-type integration. *Bernoulli*, 29(2), 1714-1740.

D'Adderio, M., Hautekiet, W., Saracco, P., & Verduyn Lunel, J. (2023). Partial and Global Representations of Finite Groups. *Algebras and representation theory*. doi:10.1007/s10468-022-10136-3

Deelstra, G., Grzelak, L., & Wolf, F. L. (2023). Accelerated computations of sensitivities for xVA. *International Journal of Computer Mathematics*, 1-23. doi:10.1080/00207160.2023.2203277

Duerinckx, M., & Gloria, A. (2023). Continuum percolation in stochastic homogenization and the effective viscosity problem. *Archive for rational mechanics and analysis*, 247, 26.

de Mol van Otterloo, S., & Alonso Garcia, J. (2023). A multi-state model for sick leave and its impact on partial early retirement incentives: the case of the Netherlands. *Scandinavian actuarial journal*, 2023(3), 244-268. doi:10.1080/03461238.2022.2092891

Alonso Garcia, J. (2023). AAS Thematic issue: "Mortality: from Lee–Carter to AI". *Annals of Actuarial Science*, 17(1), 212-214. doi:10.1017/S1748499522000069

Ciatto, N., Verelst, H., Trufin, J., & Denuit, M. (2023). Does autocalibration improve goodness of lift? *European Actuarial Journal*, 13, 479-486.

Mijoule, G., Rai#, M., Reinert, G., & Swan, Y. (2023). Stein's density method for multivariate continuous distributions. *Electronic Journal of Probability*, 28, 59. doi:10.1214/22-EJP883

Bhattacharya, S., Lefèvre, L., Hayakawa, H., Jansen, M., & Clette, F. L. (2023). Scale Transfer in 1849: Heinrich Schwabe to Rudolf Wolf. *Solar physics*, 298(1), 1-12.

Agore, A. L., Gordienko, A. S., & Vercruysse, J. (2023). V-universal Hopf algebras (co)acting on #-algebras. *Communications in Contemporary Mathematics*, 2150095. doi:10.1142/S0219199721500954

Benth, F. E., Deelstra, G., & Kozpinar, S. (2023). Pricing Energy Quanto Options in the Framework of Markov-Modulated Additive Processes. *IMA journal of management mathematics*, 34(1), 187-220. doi:10.1093/IMAMAN/DPAB032

## 2022

Mesfioui, M., Trufin, J., & Zuyderhoff, P. (2022). Bounds on Spearman's rho when at least one random variable is discrete. *European Actuarial Journal*, 12, 321-348. doi:10.1007/s13385-021-00289-8

Mesfioui, M., & Trufin, J. (2022). Best upper and lower bounds on Spearman's rho for zero-inflated continuous variables and their application to insurance. *European Actuarial Journal*, 12, 417-423. doi:10.1007/s13385-021-00296-9

Hainaut, D., Trufin, J., & Denuit, M. (2022). Response versus gradient boosting trees, GLMs and neural networks under Tweedie loss and log-link. *Scandinavian actuarial journal*, 2022(10), 841-866. doi:10.1080/03461238.2022.2037016

Callant, J., Trufin, J., & Zuyderhoff, P. (2022). Some expressions of a generalized version of the expected time in the red and the expected area in red. *Methodology and Computing in Applied Probability*, 24, 595-611.

Haydys, A. (2022). Seiberg–Witten monopoles and flat PSL ( 2 , R ) -connections. *Advances in mathematics*, 409, 108686. doi:10.1016/j.aim.2022.108686

Corradin, A., Denuit, M., Detyniecki, M., Grari, V., Sammarco, M., & Trufin, J. (2022). Joint modelling of claim frequencies and behavioral signals in motor insurance. *ASTIN bulletin*, 52(1), 33-54. doi:10.1017/asb.2021.24

Cameron, P., Herman, A., & Leemans, D. (2022). String C-groups with real Schur index 2. *Journal of pure and applied algebra*, 226, 107025.

Leemans, D., & Mulpas, J. (2022). The string C-group representations of the Suzuki, Rudvalis and O'Nan sporadic groups. *The art of discrete and applied mathematics*, 5(3), #P3.09. doi:10.26493/2590-9770.1405.4ce

Marquis, B., & Jansen, M. (2022). Information criteria bias correction for group selection. *Statistical papers*, 63(5), 1387-1414.

Mesfioui, M., & Trufin, J. (2022). Bounds on Multivariate Kendall's Tau and Spearman's Rho for Zero-Inflated Continuous Variables and their Application to Insurance. *Methodology and Computing in Applied Probability*, 24, 1051-1059. doi:10.1007/s11009-021-09869-3

Dabo-Niang, S., Thiam, B., & Verdebout, T. (2022). Asymptotic efficiency of some nonparametric tests for location on hyperspheres. *Statistics & probability letters*, 188, 109524. doi:10.1016/j.spl.2022.109524

Duerinckx, M., & Gloria, A. (2022). A short proof of Gevrey regularity for homogenized coefficients of the Poisson point process. *Comptes rendus. Mathématique*, 360, 909-918.

Deelstra, G., Grzelak, L., & Wolf, F. L. (2022). Sensitivities and Hedging of the Collateral Choice Option. *International journal of theoretical and applied finance*, 25(6), 2250027. doi:10.1142/S0219024922500273

Saracco, P., & Vercruysse, J. (2022). Globalization for geometric partial comodules. *Journal of algebra*, 602, 37-59. doi:10.1016/j.jalgebra.2022.03.013

Ernst, M., Reinert, G., & Swan, Y. (2022). On Papathanasiou's covariance expansions. *Alea (Rio de Janeiro)*, 19, 1827-1849.

Ernst, M., Reinert, G., & Swan, Y. (2022). On Papathanasiou's covariance expansions. *Alea (Rio de Janeiro)*, 19(2), 1827-1849. doi:10.30757/ALEA.V19-69

Saracco, P., & Vercruysse, J. (2022). On the globalization of geometric partial (co)modules in the categories of topological spaces and algebras. *Semigroup forum*. doi:10.1007/s00233-022-10269-3

Duerinckx, M., & Gloria, A. (2022). Sedimentation of random suspensions and the effect of hyperuniformity. *Annals of PDE*, 8(1), 2. doi:10.1007/s40818-021-00115-0

Paindaveine, D., Rasoafaraniaina, R. J., & Verdebout, T. (2022). Preliminary multiple-test estimation, with applications to k-sample covariance estimation. *Journal of the American Statistical Association*, 117, 1904-1915.

Araujo-Pardo, G., & Leemans, D. (2022). Edge-girth-regular graphs arising from bi-affine planes and Suzuki groups. *Discrete mathematics*, 345, 112991.

Leemans, D., & Vandenschrick, A. (2022). On chiral polytopes having a group  $\mathrm{PSL}(3,q)$  as automorphism group. *Journal of the London Mathematical Society*, 106(1), 85-111.

Wolf, F. L., Grzelak, L., & Deelstra, G. (2022). Cheapest-to-deliver collateral: a common factor approach. *Quantitative finance*, 22(4), 707-723.

Stevens, R., Alonso Garcia, J., Bateman, H., van Soest, A., & Bonekamp, J. (2022). Saving preferences after retirement. *Journal of economic behavior & organization*, 198, 409-433. doi:10.1016/j.jebo.2022.04.005

Duerinckx, M., Fischer, J., & Gloria, A. (2022). Scaling limit of the homogenization commutator for Gaussian coefficient fields. *The Annals of applied probability*, 32(2), 1179-1209. doi:10.1214/21-AAP1705

Bonheure, D., Moreira dos Santos, E., Parini, E., Tavares, H., & Weth, T. (2022). Nodal Solutions for Sublinear-Type Problems with Dirichlet Boundary Conditions. *International mathematics research notices*, 2022(5), 3760-3804. doi:10.1093/imrn/rnaa233

Premoselli, B. (2022). Towers of Bubbles for Yamabe-Type Equations and for the Brézis–Nirenberg Problem in Dimensions  $n \geq 7$ . *The Journal of geometric analysis*, 32(3), 73. doi:10.1007/s12220-021-00836-5

Bonheure, D., Gazzola, F., Lasiecka, I., & Webster, J. (2022). Long-time dynamics of a hinged-free plate driven by a nonconservative force. *Annales de l'Institut Henri Poincaré. Analyse non linéaire*, 39(2), 457-500. doi:10.4171/AIHPC/13

Cutting, C., Paindaveine, D., & Verdebout, T. (2022). Testing uniformity on high-dimensional spheres: the non-null behaviour of the Bingham test. *Annales de l'Institut Henri Poincaré. Section B. Calcul des probabilités et statistiques*, 58, 567–602.

Fiorini, S., Joret, G., Weltge, S., & Yuditsky, Y. (2022). Integer programs with bounded subdeterminants and two nonzeros per row. *Annual Symposium on Foundations of Computer Science*, FOCS 2021 13-24. doi:10.1109/FOCS52979.2021.00011

Spenko, Š., & Van den Bergh, M. (2022). Perverse schobers and GKZ systems. *Advances in mathematics*, 402. doi:https://doi.org/10.1016/j.aim.2022.108307

Spenko, Š., Van den Bergh, M., & Bell, J. P. (2022). On the noncommutative Bondal–Orlov conjecture for some toric varieties. *Mathematische Zeitschrift*, 300(1), 1055-1068. doi:10.1007/s00209-021-02910-8

Raedschelders, T., Spenko, Š., & Van den Bergh, M. (2022). The Frobenius morphism in invariant theory II. *Advances in mathematics*, 410. doi:10.1016/j.aim.2022.108587