

# Liste de publications de MATH

## Articles dans des revues avec comité de lecture

### A paraître

Boucher, M., Francq, C., Goto, Y., & Verdebout, T. (2025). On runs tests for directional data and their local and asymptotic optimality properties. *Statistica sinica*.

Peralvo Maroto, L., Paindaveine, D., & Verdebout, T. (2026). Rank tests for PCA under weak identifiability. *Annals of statistics*.

García-Portugués, E., Verdebout, T., & Paindaveine, D. (2026). On a class of Sobolev tests for symmetry of directions, their detection thresholds, and asymptotic powers. *Journal of the American Statistical Association*.

Fischer, A., Gaunt, R., & Swan, Y. (2025). Stein's Method of Moments on the Sphere. *Bernoulli*.

Batista, E., Hautekiet, W., Saracco, P., & Vercruysse, J. (2025). Towards a classification of simple partial comodules of Hopf algebras. *Journal of algebra*, 664, 312-347. doi:10.1016/j.jalgebra.2024.10.005

Denuit, M., Petit, R., Simon, P.-A., & Trufin, J. (2026). Recursive Partitioning based on Gini index for insurance pricing. *European Actuarial Journal*.

Bernou, A., & Duerinckx, M. (2026). Uniform-in-time estimates on the size of chaos for interacting Brownian particles. *Probability theory and related fields*.

### 2026

Leemans, D., & Vandenschrick, A. (2026). On simple groups that admit a string C-group representation. *The art of discrete and applied mathematics*, 9, #1.07.

Bernou, A., Duerinckx, M., & Ménard, M. (2026). Creation of chaos for interacting Brownian particles. *Stochastic processes and their applications*, 193, 104849. doi:https://doi.org/10.1016/j.spa.2025.104849

### 2025

Duerinckx, M., Lemm, M., & Pagano, F. (2025). On Bourgain's approach to stochastic homogenization. *Archive for rational mechanics and analysis*, 249, 81. doi:https://doi.org/10.1007/s00205-025-02145-5

Jansen, M. (2025). Constructing wavelets by welding segments of smooth functions. *Journal of Computational and Applied Mathematics*, 477, 117160.

Duerinckx, M., & Gloria, A. (2025). Large-scale dispersive estimates for acoustic operators: homogenization meets localization. *Journal of functional analysis*, 289(8), 111068. doi:https://doi.org/10.1016/j.jfa.2025.111068

Duerinckx, M., & Jabin, P.-E. (2025). Dynamics of point-vortex systems near thermal equilibrium: relaxation or not? *Probability and Mathematical Physics*, 6(4), 1181-1244. doi:10.2140/pmp.2025.6.1181

Simon, P.-A., Denuit, M., & Trufin, J. (2025). DPTree and DPForest: Tree-based methods fulfilling demographic parity. *Annals of Actuarial Science*, 1-19. doi:10.1017/S1748499525100092

Denuit, M., Huyghe, J., Simon, P.-A., & Trufin, J. (2025). Tweedie dominance for autocalibrated predictors and Laplace transform order. *Scandinavian actuarial journal*. doi:10.1080/03461238.2025.2557295

Bonheure, D., & Galdi, G. P. (2025). Global Weak Solutions to a Time-Periodic Body-Liquid Interaction Problem. *Annales de l'Institut Henri Poincaré. Analyse non linéaire*, 42(6), 1509–1541.

Leemans, D., & Toledo Roy, M. A. (2025). Faithful and thin non-polytopal maniplxes. *Ars Mathematica contemporanea.*, P1.04.

Hou, D. D., Feng, Y. Q., & Leemans, D. (2025). Regular 3-polytopes of order  $2n$  p. *Journal of group theory*. doi:10.1515/jgth-2024-0154

Araujo-Pardo, G., Conder, M., Garcia Colin, N., Kiss, G., & Leemans, D. (2025). A note on girth-diameter cages. *The art of discrete and applied mathematics*, 8, 3.06.

Leemans, D., Stokes, K., & Tranchida, P. (2025). Flag transitive geometries with trialities and no dualities coming from Suzuki groups. *Journal of combinatorial theory. Series A*, 213, 106033. doi:10.1016/j.jcta.2025.106033

Hou, D. D., Feng, Y. Q., Leemans, D., & Qu, H. P. (2025). String C-groups of order  $4pm$ . *Communications in algebra*. doi:10.1080/00927872.2025.2459858

Fischer, A., Gaunt, R., & Swan, Y. (2025). Stein's method of moments for truncated multivariate distributions. *Electronic Journal of Statistics*, 19(1), 1784-1808. doi:10.1214/25-EJS2373

Fiorini, S., Joret, G., Weltge, S., & Yuditsky, Y. (2025). Integer programs with bounded subdeterminants and two nonzeros per row. *Journal of the Association for Computing Machinery*, 72(1), 3.

Aprile, M. F., Fiorini, S., Joret, G., Kober, S., Seweryn, M. M., Weltge, S., & Yuditsky, Y. (2025). Integer programs with nearly totally unimodular matrices: the cographic case\*. *Proceedings of the annual ACM-SIAM Symposium on Discrete Algorithms*, 2301-2312.

Boucher, M., Meilán-Vila, A., Meurice, V., & Verdebout, T. (2025). On a modified Watson test for spherical location. *Statistical papers*, 66(4), 79. doi:10.1007/s00362-024-01651-0

Fine, J., He, W., & Yao, C. (2025). Convergence of the hypersymplectic flow on  $T^4$  with  $T^3$  symmetry. *Journal of the London Mathematical Society*, 111(6). doi:10.1112/jlms.70217

Alonso Garcia, J., Boado-Penas, M. D. C., & Eisenberg, J. (2025). Assessing public pensions using risk measures: pay-as-you-go versus mixed schemes. *Scandinavian actuarial journal*, 1-27. doi:10.1080/03461238.2025.2514601

Duerinckx, M., Ertzbischoff, L., Girodroux-Lavigne, A., & Höfer, R. R. (2025). Hydrodynamic limit of multiscale viscoelastic models for rigid particle suspensions. *Archive for rational mechanics and analysis*, 249, 23. doi:https://doi.org/10.1007/s00205-025-02092-1

Premoselli, B., & Robert, F. (2025). One-bubble nodal blow-up for asymptotically critical stationary Schrödinger-type equations. *Journal of functional analysis*, 288(6), 110808. doi:10.1016/j.jfa.2024.110808

Bonheure, D., Galdi, G. P., & Gazzola, F. (2025). Flow-induced oscillations via Hopf bifurcation in a fluid–solid interaction problem. *Mathematische Annalen*. doi:10.1007/s00208-025-03179-6

Bonheure, D., Galdi, G. P., & Patriarca, C. (2025). Forced Oscillations of a Spring-Mounted Body by a Viscous Liquid: Rotational Case. *Pure and Applied Analysis*, 7, 4.

Germain, G., & Swan, Y. (2025). Bounding the L1-Distance Between One-Dimensional Continuous and Discrete Distributions via Stein's Method. *Journal of theoretical probability*, 38(1), 1-43.

Jansen, M. (2025). Multiscale local polynomial density estimation. *Communications in statistics. Theory and methods*, 54(16), 5164-5190. doi:10.1080/03610926.2024.2434933

## 2024

Garcia-Colin, N., Leemans, D., Müßig, M., & Roldán, É. (2024). There is no perfect Mondrian partition for squares of side lengths less than 1001. *Discrete applied mathematics*, 359, 400-406. doi:10.1016/j.dam.2024.09.021

Duerinckx, M. (2024). Semi-Dilute Rheology of Particle Suspensions: Derivation of Doi-Type Models. *Archive for rational mechanics and analysis*, 248(6), 94. doi:10.1007/s00205-024-02047-y

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

Morsomme, H., Alonso Garcia, J., & Devolder, P. (2024). Intergenerational risk sharing in pay-as-you-go pension schemes. *Scandinavian actuarial journal*, 1-29. doi:10.1080/03461238.2024.2427229

Loris, I., & Rebegoldi, S. (2024). Convergence analysis of a primal-dual optimization-by-continuation algorithm. *Journal of computational and applied mathematics*, 452, 116299. doi:10.1016/j.cam.2024.116299

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

Belhouari, O., Deelstra, G., & Devolder, P. (2024). Hybrid life insurance valuation based on a new standard deviation premium principle in a stochastic interest rate framework. *European Actuarial Journal*, 2024, 1-28.

Deelstra, G., Devolder, P., & Roelants Du Vivier, B. (2024). Impact of correlation between interest rates and mortality rates on the valuation of various life insurance products. *ASTIN bulletin*, 2024, 1-31.

Bernard, G., & Verdebout, T. (2024). Power enhancement for dimension detection of Gaussian signals. *Statistica sinica*, 34, 2161-2182.

Hallin, M., Liu, H., & Verdebout, T. (2024). Nonparametric Measure-transportation-based Methods for Directional Data. *Journal of the Royal Statistical Society. Series B. Methodological*, 86, 1172-1196.

Cameron, P., Fernandes, M. E., & Leemans, D. (2024). The number of string C-groups of high rank. *Advances in mathematics*, 453, 109832.

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

Mansanarez, P., Poly, G., & Swan, Y. (2024). Derivatives of Entropy and the MMSE Conjecture. *IEEE transactions on information theory*, 70(11), 7647-7663. doi:10.1109/TIT.2024.3466566

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

Grosskopf, P., & Vercruysee, 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., & Vercruysee, 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). Rudolf Wolf to Alfred Wolf: 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., & Vercruyse, 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., & Vercruyse, 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
- Premoselli, B. (2024). A Priori Estimates for Finite-Energy Sign-Changing Blowing-Up Solutions of Critical Elliptic Equations. *International mathematics research notices*, 2024(6), 5212-5273. doi:10.1093/imrn/rnad237
- 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
- Bernard, G., & Verdebout, T. (2024). On some multivariate sign tests for scatter matrix eigenvalues: On some multivariate sign tests for scatter matrix eigenvalues. *Econometrics and Statistics*, 29, 252-260.
- 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
- 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.
- Duerinckx, M., Gloria, A., & Ruf, M. (2024). A spectral ansatz for the long-time homogenization of the wave equation. *Journal de l'Ecole Polytechnique - Mathematiques*, 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
- Ferrarini, L., Fiorini, S., Kober, S., & Yuditsky, Y. (2024). Total Matching and Subdeterminants. *Lecture notes in computer science*, 14594 LNCS, 192-204. doi:10.1007/978-3-031-60924-4\_15