

B. List of publications in 2020

B.1 Papers in peer review journal

1. Alho, A., Bessa, V., Mena, F.C., Global dynamics of Yang-Mills field and perfect-fluid Robertson-Walker cosmologies, *Journal of Mathematical Physics*, 61 (2020) 032502.
2. Anwasia, B., Bisi, M., Salvarani, F., Soares, A.J., On the Maxwell-Stefan diffusion limit for a reactive mixture of polyatomic gases in non-isothermal setting, *Kinetic and Related Models*, 13 (1) (2020) 63-95.
3. Anwasia, B., Gonçalves, P., Soares, A.J., On the formal derivation of the reactive Maxwell-Stefan equations from the kinetic theory, *Europhysics Letters*, 129 (4) (2020).
4. Astefanesei, D., Herdeiro, C., Oliveira, J., Radu, E., Higher dimensional black hole scalarization, *Journal of High Energy Physics*, 61 (2020) 186.
5. Avelino, C., Santos, A., Triangular spherical dihedral f-tilings: the $(\pi/2, \pi/3, \pi/4)$ and $(2\pi/3, \pi/4, \pi/4)$ family, *Revista de la Unión Matemática Argentina*, 61 (2) (2020) 367-387.
6. Azevedo, A., Rodrigues, J.F., Santos, L., Lagrange multipliers for evolution problems with constraints on the derivatives, *St. Petersburg Mathematical Journal*, 32 (3) (2020) 65-83.
7. Barbosa, P., Lourenço-Gomes, M. d. C., Araújo, S., Castro, C., Athayde, E., Constraints on multiple dependencies in the left-periphery in European Portuguese, *Journal of Portuguese Linguistics*, 19 (2020) 1-33.
8. Belhaj, S., Fahd, H., Zhang, Y.L., A fast method for solving a block tridiagonal quasi-Toeplitz linear system, *Portugaliae Mathematica* 76(3-4) (2020), 287-299.

9. Bessa, M., Dias, J.L., Torres, M.J., Hyperbolicity through stable shadowing for generic geodesic flows, *Physica D: Nonlinear Phenomena*, 406 (2020) 132423.
10. Bessa, M., Torres, M. J., There are no proper topological hyperbolic homoclinic classes for area-preserving maps, *Proceedings of the Edinburgh Mathematical Society*, 63 (1) (2020) 217-228.
11. Brito I., A decision model based on expected utility, entropy and variance, *Applied Mathematics and Computation*, 379 (2020) 125285.
12. Brito, I., Carot, J., Vaz, E.G.L.R., Elastic thick shells in general relativity, *Physical Review D*, 102 (2) (2020) 024081, 13pp.
13. Cabral, P.D., Domingues, T., Machado Jr., G., Chicharo, A., Cerqueira, F., Fernandes, E., Athayde, E., Alpuim, P., Borme, J., Clean-room lithographical processes for the fabrication of graphene biosensors, *Materials*, 13 (2020) 5728.
14. Catarino, P., Bilgici, G., A Note on Modified k-Pell Hybrid Numbers, *Konuralp Journal of Mathematics* 8(2) (2020) 229-233.
15. Catarino, P., Borges, A., A note on incomplete Leonardo numbers, *Integers* 20 (2020) #A43, 7pp.
16. Catarino, P., Borges, A., On Leonardo numbers, *Acta Mathematica Universitatis Comenianae* 89(1) (2020) 75-86.
17. Catarino, P., Campos, H., Vasco, P., A note on k-Pell, k-Pell-Lucas and Modified k-Pell numbers with arithmetic indexes, *Acta Mathematica Universitatis Comenianae* 89(1) (2020) 97-107.
18. Catarino, P., Vasco, P., The Generalized order-m (k-Pell) numbers, *Scientific Annals of the Alexandru Ioan Cuza Univ. Iași (New Series)*. *Mathematics* 66(1) (2020) 55-65.
19. Destounis, K., Fontana, R., Mena, F.C., Accelerating black holes: quasinormal modes and late-time tails, *Physical Review D*, 102 (2) (2020) 044005.
20. Ding, Y., Zeng, W., Wang, Q., Zhang, Y.L., Topographical analysis of fractured surface roughness of macro fiber reinforced concrete and its correlation with flexural toughness, *Construction and Building Materials* 235 (2020) 117466.

21. Duarte, P., Torres, M.J., Isospectral Reduction in Infinite Graphs, *Journal of Spectral Theory*, 10 (3) (2020) 955-989.
22. Espírito Santo, J., Ferreira, G., A refined interpretation of intuitionistic logic by means of atomic polymorphism, *Studia Logica* 108(3) (2020) 477-507.
23. Faria, T., Oliveira, J.J., Global asymptotic stability for a periodic delay hematopoiesis model with impulses, *Applied Mathematical Modelling*, 74 (2020) 843-864.
24. Ferrás, L.L., Afonso, A.M., Alves, M.A., Nóbrega, J., Pinho, F.T., Newtonian and viscoelastic fluid flows through an abrupt 1:4 expansion with slip boundary conditions, *Physics of Fluids*, 32 (4) (2020) 043103.
25. Ferreira, C., Parlett, B., Eigenpairs of Wilkinson Matrices, *SIAM Journal on Matrix Analysis and Applications* 41(3) (2020) 1388-1415.
26. Ferreira, F., Wojtak, W., Sousa, E., Louro, L., Bicho, E., Erlhagen, W., Rapid learning of complex sequences with time constraints: A dynamic neural field model, *IEEE Transactions on Cognitive and Developmental Systems*, (2020).
27. Ferreira, H., Ferreira, M., Dissecting the multivariate extremal index and tail dependence, *Revstat Statistical Journal*, 18(4) (2020) 501-520.
28. Ferreira, H., Ferreira, M., Multivariate medial correlation with applications, *Dependence Modeling*, 8 (2020) 361-372.
29. Ferreira, H., Ferreira, M., Tail Dependence Under Sample Failures, *Theory of Probability and its Applications*, 64(4) (2020) 636-645.
30. Fornaro, S., Henriques, E., Vespri, V. , Harnack type inequalities for the parabolic logarithmic p-Laplacian equation, *Le Matematiche*, LXXV (I) (2020) 277-311.
31. Galindro, A., Cerveira, A., Torres, D. F. M., Matias, J., Marta-Costa, A., A Mathematical Model for Vineyard Replacement with Nonlinear Binary Control Optimization, *Discontinuity, Nonlinearity and Complexity*, 9 (2020) 173-186.
32. Gao, Y., Chen, J., Patrício, P., Representations and properties of the W -weighted core-EP inverse, *Linear and Multilinear Algebra* 68(6) (2020) 1160-1174.
33. Gao, Y., Chen, J., Patrício, P., Weighted binary relations involving core-EP inverse, *Frontiers of Mathematics in China* 15(4) (2020) 685-699. (JIF=1.03 Q2, SJR=0.479 Q2, MCQ=0.53)

34. Gulletta, G., Erhagen, W., Bicho, E., Human-Like Arm Motion Generation: A Review, *Robotics*, 9 (4) (2020) 102.
35. Henriques, E., Local Holder regularity for a doubly singular PDE, *Communications in Contemporary Mathematics*, 22 (3) (2020) 1850054.
36. Herdeiro, C., Oliveira, J., Electromagnetic dual Einstein- Maxwell-scalar models, *Journal of High Energy Physics*, 2020 (2020) 130.
37. Herdeiro, C., Oliveira, J., On the inexistence of self-gravitating solitons in generalised axyon electrodynamics, *Physics Letters B*, 800 (2020) 135076.
38. Herdeiro, C., Oliveira, J., Radu, E., A Class of Solitons in Maxwell-scalar and Einstein-Maxwell-scalar models, *European Physical Journal C*, 80 (2020) 23.
39. Liu, Z.Y., Li, S., Yin, Y., Zhang, Y.L., Fast solvers for tridiagonal Toeplitz linear systems, *Computational and Applied Mathematics* 39 (2020) article315.
40. Liu, Z.Y., Li, Z., Ferreira, C., Zhang Y.L., Stationary splitting iterative methods for the matrix equation $AXB=C$, *Applied Mathematics and Computation* 378 (2020) 125195.
41. Liu, Z.Y., Zhou, Y., Zhang, Y.L., On inexact ADI iteration for continuous Sylvester equations, *Numerical Linear Algebra with Applications* 27(5) (2020) e2320.
42. Lorthe, E., Moreira, C., Weber, T., Huusom, L. D., Schmidt, S., Maier, R. F., Jarreau, P.-H., Cuttini, M., Draper, E. S., Zeitlin, F., Barros, H., Unit policies regarding tocolysis after preterm premature rupture of membranes: association with latency, neonatal and 2-year outcomes in the EPICE population-based cohort study, *Scientific Reports*, 10 (2020) 9535.
43. Luz, P., Mena, F.C., Singularity theorems and the inclusion of torsion in affine theories of gravity, *Journal of Mathematical Physics*, 61 (2020) 012502.
44. Macêdo, M.J.F.G., Karas, E.W., Costa, M.F.P., Rocha, A.M.A.C., Filter-based stochastic algorithm for global optimization, *Journal of Global Optimization*, 77 (2020) 777-805.
45. Manguiera, M.C.S., Vieira, R.P.M., Alves, F. R. V., Catarino, P., The Hybrid Numbers of Padovan and Some Identities, *Annales Mathematicae Silesianae* 34(2) (2020) 256-267.
46. Miranda, F., Rodrigues, J.F., Santos, L., Evolutionary quasi-variational and variational inequalities with constraints on the derivatives, *Advances in Nonlinear Analysis*, 9 (1) (2020) 250-277.

47. Monaco, R., Negrini, G., Salizzoni, E., Soares, A.J., Voghera, A., Inside-outside park planning: A mathematical approach to assess and support the design of ecological connectivity between Protected Areas and the surrounding landscape, *Ecological Engineering*, 149 (105748) (2020) 1-11.
48. Monteiro, A., Menezes, R., Silva, E., Modelling Irregularly Spaced Time Series Under Preferential Sampling, *Revstat Statistical Journal*, 18(5) (2020) 661-672.
49. Neco, A., Menezes, R., Faria, S., Afonso, P., Mixed-effects modelling for crossed and nested data: an analysis of dengue fever in the state of Goiás, Brazil, *Journal of Applied Statistics*, 47(13-15) (2020) 2912-2926.
50. Oliveira J.R., On the de Rham cohomology of locally trivial Lie groupoids over triangulated manifolds, *Proceedings of the International Geometry Center*, 13 (4) (2020) 116-125.
51. Pais, R., Ruano, L., Moreira, C., Carvalho, O., Barros, H., Prevalence and incidence of cognitive impairment in an elder Portuguese population (65-85 years old), *BMC Geriatrics*, 20(1) (2020) 470.
52. Rocha, V., Fraga, S., Moreira, C., Carmeli, C., Lenoir, A., Steptoe, A., Giles, G., Goldberg, M., Zins, M., Kivimäki, M., Vineis, P., Vollenweider, P., Barros, H., Stringhini, S. for the LIFEPAATH Consortium, Life-course socioeconomic disadvantage and lung function: a multicohort study of 70 496 individuals, *European Respiratory Journal*, (2020) 2001600.
53. Vieira, M.V.C., Ferreira, F., Duque, J. C. M., Almeida, R. M. P., On the packing process in a shoe manufacturer , *Journal of the Operational Research Society*, (2020) 1-12.
54. Wojtak, W., Ferreira, F., Vicente, P., Louro, L., Bicho, E., Erlhagen, W., A neural integrator model for planning and value-based decision making of a robotics assistant, *Neural Computing and Applications*, (2020) .
55. Zeng, W., Ding, Y., Zhang, Y.L., Dehn, F., Effect of steel fiber on the crack permeability evolution and crack surface topography of concrete subjected to freeze-thaw damage, *Cement and Concrete Research* 138 (2020) 106230.

B.2 Conference papers

1. Braga, J., Ferreira, F., Fernandes, C., Gago, M.F., Azevedo, O., Sousa, N., Erlhagen, W., Bicho, E., Gait Characteristics and Their Discriminative Ability in Patients with

- Fabry Disease with and Without White-Matter Lesions. In Computational Science and Its Applications - ICCSA 2020 - 20th International Conference, Cagliari, Italy, July 1-4, 2020, Proceedings, Part III.
2. Costa, M.F.P., Fernandes, E.M.G.P., Rocha, A.M. A. C., Penalty-based Heuristic DIRECT Method for Constrained Global Optimization. In Lecture Notes in Computer Science, Springer, Cham, 2020.
 3. Costa, M.F.P., Rocha, A.M.A.C., Fernandes, E.M.G.P., Objective and Violation Upper Bounds on a DIRECT-Filter Method for Constrained Global Optimization. In Lecture Notes in Computer Science, Springer, 2020.
 4. Espírito Santo, J., The call-by-value lambda-calculus with generalized applications, 28th Conference on Computer Science Logic, Barcelona, Spain, January 13-16, Dagstuhl - LIPIcs, 152, 35:1-35:12, 2020.
 5. Fernandes, C., Ferreira, F., Erlhagen, W., Monteiro, S., Bicho, E., Deep Learning Approach for Intelligent Cockpits: Learning Drivers Routines. In Intelligent Data Engineering and Automated Learning - IDEAL 2020- 21st International Conference, Guimaraes, Portugal, November 4-6, 2020, Proceedings, Part IIA.
 6. Galindro, A., Matias, J., Cerveira, A., Santos, C., Marta-Costa, A., Prediction of Viticulture Farms Behaviour: An Agent-Based Model Approach. In The Changing Role of SMEs in Global Business: Contextual Evolution Across Markets, Disciplines and Sectors, 2020.
 7. Louro, L., Malheiro, T., Guimaraes, P., Machado, T., Monteiro, S., Silva, P.V., Erlhagen, W., Bicho, E., Motion Control for Autonomous Tugger Vehicles in Dynamic Factory Floors Shared with Human Operators IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society, Lisbon, Portugal, Oct. 14-17, 2019. IEEE, 2020.
 8. Oliveira, R., Gonçalves, A.M., Vasconcelos, R.M., Evaluation of applicants' satisfaction index in engineering courses in Portugal during Pre- and Post-Bologna Period, 16th International Conference of Numerical Analysis and Applied Mathematics, Rhodes, Greece, September 13-18, 2018, American Institute of Physics (AIP Conference Proceedings), 2293(1) 420105-1-420105-4, 2020.
 9. Patel, A. R., Ferreira, F., Monteiro, S., Bicho, Global implications of human tendencies towards automated driving and human driver availability in autonomous vehicles. In E.HCI International 2020 – Late Breaking Papers: Digital Human Modeling and Ergonomics, Mobility and Intelligent Environments.

10. Rocha, A.M.A.C., Costa, M.F.P., Fernandes, E.M.G.P., A Population-Based Stochastic Coordinate Descent Method. In *Advances in Intelligent Systems and Computing*, Springer, 2020.
11. Rocha, A.M.A.C., Matos, M.A., Costa, M.F.P., Gaspar-Cunha, A., Fernandes, E.M.G.P., Single Screw Extrusion Optimization using the Tchebyche Scalarization Method. In *Lecture Notes in Computer Science*, Springer, 2020.
12. Rocha, A.M.A.C., Costa, M.F.P., Fernandes, E.M.G.P., Simplified Tabu Search with Random-based Searches for Bound Constrained Global Optimization, *Lecture Notes in Computer Science*, Springer, 2020.
13. Silva, L., Lima, S., Meireles, J., Pinhão, M., Gonçalves, A. M., Malheiro, M. T., Machado, J., A Systematic Analysis of an Industrial Pick-Up & Placement Production System, 5th EAI International Conference on Management of Manufacturing Systems (EAI MMS 2020), Online conference, 27-28 October 2020. Springer, 2020.
14. Cunha, A., Ferreira, F., Erlhagen, W., Sousa, E., Louro, L., Vicente, P., Monteiro, S., Bicho, E. Towards Endowing Collaborative Robots with Fast Learning for Minimizing Tutors' Demonstrations: What and When to Do? *Robot 2019: Fourth Iberian Robotics Conference*, Porto, Portugal, Nov. 20-22, 2019. Springer *Advances in Intelligent Systems and Computing* book series (AISC), 1092, 368-378, 2020.

B.3 Other publications

1. Aguiar, C. A., Forjaz, M. A., Almeida, M. J., FOCUS-prepara o futuro: cria a cidade sustentável, Chapter In E. Araújo, M. Silva & R. Ribeiro (Eds.), *Sustentabilidade e descarbonização: desafios práticos* (pp. 99-115). Braga: CECS. CECS-Centro de Estudos de Comunicação e Sociedade Universidade do Minho, Braga, Portugal ISBN digital 978-989-8600-90-5 ISBN impresso 978-989-8600-91-2, 2020, June.
2. Amorim, A.P., Athayde, E., Castro, A., Faria, S., Ferreira, M., Gonçalves, A.M., Meira-Machado, L., Menezes, R., Moreira, C., Serra, M.C., Sousa, I., UM departamento com ESTATÍSTICA, *Boletim da Sociedade Portuguesa de Estatística* (Outono 2020), Sociedade Portuguesa de Estatística, 45-47, 2020.
3. Catarino, P., Nascimento, M.M., Morais, E., Vasco, P., *The Roads We Choose: Critical Thinking Experiences in Mathematical Courses*, ICMASE2020 - International Confer-

- ence on Mathematics and Its Applications in Science and Engineering, online conference, Ankara Univ., Turkey,
4. Catarino, P., Vasco, P., An Individual work of higher education's students in COVID-19 time: sharing some of that work, ICERI 2020-13th annual International Conference of Education, Research and Innovation, November 9-10,
 5. Evaristo, J., Catarino, P., Aires, A.P., Campos, H., A Didactic Proposal for Teaching Sequences in the 2nd Cycle of Secondary Education in Angola, INTED 2020-14th annual International Technology, Education and Development Conference, Valencia, Spain, March 2-4, IATED, 3809-3819, 2020.
 6. Evaristo, J., Catarino, P., Aires, A.P., Campos, H., Teaching Numerical Sequences from Geometry in the 2nd Cycle of Secondary Education, INTED 2020-14th annual International Technology, Education and Development Conference, Valencia, Spain, March 2-4, IATED, 3772-3779, 2020.
 7. Ferreira, F., Fernandes, C., Braga, J., Bicho, E., Erlhagen, W., Gago, M., The effect of levodopa medication on stride time variability in patients with parkinsonism. *Journal of Statistics on Health Decision*.
 8. Monaco, R., Negrini, G., Salizzoni, E., Soares, A.J., Voghera, A., Inside-outside park planning: A mathematical approach to assess and support the design of ecological connectivity between Protected Areas and the surrounding landscape. *Ecological Engineering*, 149, 105748.
 9. Pombo, B.; Ferreira, A.C.; Cordoso, P.; Oliveira, A. Clinical effectiveness of Enneking appropriate versus Enneking inappropriate procedure in patients with primary osteosarcoma of the spine. *European Spine Journal*, 29 (2020), 238-247.
 10. Santos, M., Borges, A., Carneiro, D., Ferreira, F., Detection analysis of breaks in water consumption patterns: a simulation study. VII Workshop on Computational Data Analysis and Numerical Methods.
 11. Vieira, M.V.C., Ferreira, F., Packing shoes efficiently. *Impact Magazine from The Operational Research Society*.