

## Anexa 1 – Publicații Științifice

### 10 lucrări științifice relevante

Aceasta este selecția celor 10 lucrări recente (din ultimii 10 ani).

1. Stable and explainable deep learning damage prediction for prismatic cantilever steel beam, **DM Onchis**, GR Gillich, Computers in Industry 125, 103359, 2021, (*Journal Impact Factor: 11.245*, Zona roșie Q1)
2. A deep learning approach to condition monitoring of cantilever beams via time-frequency extended signatures, **DM Onchis (autor unic)**, Computers in Industry 105, 177-181, 2019, (*Journal Impact Factor: 11.245*, Zona roșie Q1)
3. Dataset Knowledge Transfer for Class-Incremental Learning Without Memory, H Slim, E Belouadah, A Popescu, **DM Onchis**, Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, 2022, (*conferinta A*, WACV is the premier international computer vision event for computer vision applications)
4. A parallel homological spanning forest framework for 2D topological image analysis, F Diaz-del-Rio, P Real, **DM Onchis**, Pattern Recognition Letters 83, 49-58, 2016, (*Journal Impact Factor: 4.757*, Zona galbenă Q2)
5. Construction of approximate dual wavelet frames. Hans G. Feichtinger, **DM Onchis** și Christoph Wiesmeyr. Advances in Computational Mathematics, Springer, Volume 40, Issue 1, Pages 273-282, 2014, (*Journal Impact Factor: 1.929*, Zona roșie Q1).
6. Generalized Goertzel algorithm for computing the natural frequencies of cantilever beams. **Darian M. Onchis** și Pavel Rajmic. Signal Processing, Elsevier, Pages 45–50, 2014, (*Journal Impact Factor: 4.729*, Zona roșie Q1).
7. Increasing the image resolution using multi-windows spline-type spaces, **DM Onchis (autor unic)**, Signal Processing 103, 195-200, 2014, (*Journal Impact Factor: 4.729*, Zona roșie Q1)
8. Realizable algorithm for approximating Hilbert–Schmidt operators via Gabor multipliers, **DM Onchis**, S Zappalà, Journal of Computational and Applied Mathematics 337, 119-124, 2018, (*Journal Impact factor: 2.872*, Zona roșie Q1)
9. Detection of the mandibular canal in orthopantomography using a Gabor-filtered anisotropic generalized Hough transform, **DM Onchis**, S Zappalà, SL Goția, P Real, M Pricop, Pattern Recognition Letters 83, 85-90, 2016, (*Journal Impact Factor: 4.757*, Zona galbenă Q2)
10. Timely-Automatic Procedure for Estimating the Endocardial Limits of the Left Ventricle Assessed Echocardiographically in Clinical Practice, **DM Onchis**, C Istin, C Tudoran, M Tudoran, P Real, Diagnostics 10 (1), 40, 2020, (*Journal Impact Factor: 3.992*, Zona roșie Q1)



## Teza de doctorat

**Darian M. Onchis.** *Metode funcționale și computaționale în teoria semnalelor.* Universitatea de Vest din Timișoara, România, 2006. Conducător științific: Prof. univ. dr. Dumitru Gașpar. Universitatea din Sevilla, Spania 2008, Tutore: Prof. univ. dr. Alberto Marquez (Escuela Técnica Superior de Ingeniería Informática), HASSIP.

## Teza de abilitare

**Darian M. Onchis.** *Constructive frames-based realizations in time-frequency analysis. Approximations constructives et effectives basées sur repères en analyse temps-fréquence.* Aix-Marseille University (Centre de Mathématiques et Informatique). Marseille, France, 2014. Tutor: Prof. univ. dr. Bruno Torresani. (Jury: Prof. Peter Maass (Bremen, Germania), Prof. Pedro Real (Sevilla, Spania), Prof. Valerie Perrier (Grenoble, Franța), Prof. Frederic Richard (Marseille, Franța), Prof. Ole Christensen (Copenhagen, Danemarca)).

**Darian M. Onchis.** *Recognition Algorithms from Transforms and Spanning Forests to Machine Learning.* Universitatea de Vest din Timișoara, România, 2022 (Comisie: Prof. Dr. Horia F. Pop (UBB), Prof. Dr. Radu Ionescu (UB), Prof. Dr. Mihai Micea (UPT)).

## Lista articolelor în exteso, publicate în reviste din fluxul științific internațional principal (selecție)

1. **Darian M. Onchiș**, Eduard Hoge. A Neuro-Symbolic Classifier with Optimized Satisfiability for Monitoring Security Alerts in Network Traffic , Applied Sciences (Switzerland), 12(22), 11502, 2022, <https://doi.org/10.3390/app122211502>, (*publicată după a doua abilitare din mai 2022*).
2. Gabriel Cozma, **Darian M. Onchiș**, Codruta Istin, Ioan Petrache. Explainable Machine Learning Solution for Observing Optimal Surgery Timings in Thoracic Cancer Diagnosis, Applied Sciences (Switzerland) 12(13), 6506, 2022, <https://doi.org/10.3390/app12136506>, (*publicată după a doua abilitare din mai 2022*).
3. Cosmin Secășan, **Darian M. Onchiș** et. al. Artificial Intelligence System for Predicting Prostate Cancer Lesions from Shear Wave Elastography Measurements, Current Oncology, 29(6), pp. 4212–4223, 2022, <https://doi.org/10.3390/curroncol29060336>, (*publicată după a doua abilitare din mai 2022*).
4. **Darian M. Onchis**, Simone Zappala, Smaranda L. Gotia, Pedro Real and Marius Pricop, Detection of the mandibular canal in orthopantomography using a Gabor-filtered anisotropic generalized Hough transform. Pattern Recognition Letters, Elsevier 2015. DOI:10.1016/j.patrec.2015.12.001, Online 2015, FWF.
5. Benjamin Ricaud, Guillaume Stempfrel, Bruno Torresani, Christoph Wiesmeyr, Helene Lachambre și **Darian M. Onchis**. An optimally concentrated Gabor transform for localized time-frequency components. Advances in Computational Mathematics, Springer, Volume 40, Issue 3, Pages: 683-702, 2014. DOI 10.1007/s10444-013-9337-9 , UNLOCKX.
6. **Darian M. Onchis**. Increasing the image resolution using multi-window spline-type spaces. Journal Signal Processing, Elsevier, Volume 103, Pages: 195-200, 2014. DOI: 10.1016/j.sigpro.2013.11.010, ESO.





7. **Darian M. Onchis**. Optimized frames and multi-dimensional challenges in time-frequency analysis. *Advances in Computational Mathematics*, Springer, Volume 40, Issue 3, Pages: 703-709, 2014. DOI: 10.1007/s10444-013-9332-1, UNLOCX.
8. Mihail Gaianu și **Darian M. Onchis**. Face and marker detection using Gabor frames on GPUs, *Signal Processing*, Elsevier, Volume 96, Part A, Pages 90-93, 2014. DOI: 10.1016/j.sigpro.2013.06.029, UNLOCX.
9. Hans G. Feichtinger, **Darian M. Onchis** și Christoph Wiesmeyr. Construction of approximate dual wavelet frames. *Advances in Computational Mathematics*, Springer, Volume 40, Issue 1, Pages 273-282, 2014. DOI: 10.1007/s10444-013-9307-2, UNLOCX.
10. **Darian M. Onchis** și Pavel Rajmic. Generalized Goertzel algorithm for computing the natural frequencies of cantilever beams. *Signal Processing*, Elsevier, Pages 45–50. DOI: 10.1016/j.sigpro.2013.07.026, EXCEL.
11. Mihail Gaianu, Gabriela Cristescu și **Darian M. Onchis**. Erosion based method for quantification of facial palsy. *International Journal of Computers, Communications and Control*, ISSN 1841-9836. 8(3):416-424, 2013, UNLOCX.
12. **Darian M. Onchis**. Observing damaged beams through their time-frequency extended signatures. *Journal Signal Processing*, Elsevier, Pages 16-20, 2014. DOI: 10.1016/j.sigpro.2013.03.039, EXCEL.
13. Hans G. Feichtinger, Anna Grybos și **Darian M. Onchis**. Approximate dual Gabor atoms via the adjoint lattice method, *Advances in Computational Mathematics*, Springer, Volume 40, Issue 3, Pages: 651-665, 2014. DOI: 10.1007/s10444-013-9324-1, UNLOCX.
14. **Darian M. Onchis**. Signal reconstruction in multi-windows spline-type spaces using the dual system. *IEEE Signal Processing Letters*, Volume 19, Issue 11, Pages 729-732, 2012. DOI: 10.1109/LSP.2012.2213591, ESO.
15. Hans Feichtinger și **Darian M. Onchis**. Constructive realization of the dual systems for multi-windows spline-type spaces. *Journal of Computational and Applied Mathematics*, Elsevier, Volume 234, Issue 12, Pages 3467 – 3479, 2010. DOI: 10.1016/j.cam.2010.05.010.
16. **Darian M. Onchis** și Esperanza Suarez Sanchez, The flexible Gabor-wavelet transform for the investigation of car crashes data, *International Journal of Wavelets, Multiresolution and Information Processing (IJWMIP)*, Volume 4, Pages: 481-490. 2009. DOI: 10.1142/S0219691309003045.
17. Gilbert-Rainer Gillich, Zeno Praisach și **Darian M. Onchis**. Finite Element Method based Algorithm for Localization of Damages in Cantilever Beams, *Romanian Journal of Acoustics and Vibration*, Volume VII, Issue 2, ISSN 1584-7284, 2010, EXCEL.

**Lista publicațiilor în extenso, apărute în lucrări ale principalelor conferințe internaționale de specialitate (selecție)**

1. Fernando Diaz del Rio, Pedro Real, **Darian M. Onchis**. Labeling color 2D digital images in theoretical near logarithmic time, *International Conference on Computer Analysis of Images and Patterns*, 391-402, 2017, (*Conferinta B*).



2. **Darian M. Onchis** și Pedro Real. On homotopy continuation for speech restoration. *Publisher: Springer*, Lecture Notes in Computer Science (LNCS) 9667, book title Computational Topology in Image Context 2016, ISBN 978-3-319-39440-4, FWF.
3. Fernando Diaz-del-Rio, Pedro Real și **Darian M. Onchiș**. A parallel implementation for computing the Region-Adjacency-Tree of a segmentation of a 2D digital image. *Publisher: Springer*, Lecture Notes in Computer Science (LNCS) 9555, Image Processing series, 2015, ISBN 978-3-319-30285-0, FWF.
4. **Darian M. Onchis** și Anna Grybos. Approximate Dual M-Frames Constructions: The Gabor Case. *Publisher: Springer*, Current Trends in Analysis and Its Applications, pp.681-687, DOI: 10.1007/978-3-319-12577-0\_74, ISBN 978-3-319-12577-0, 2015, HOST.
5. Helene Lachambre, Benjamin Ricaud, Guillaume Stempfrel, Bruno Torresani, Christoph Wiesmeyr și **Darian M. Onchis**. Optimal Window and Lattice in Gabor Transform. Application to Audio Analysis, *Publisher: IEEE*, 17th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Pages: 109 - 112, DOI: 10.1109/SYNASC.2015.25, ISBN 978-0-7695-5742-2, 2015, HOST, FWF.
6. **Darian M. Onchis** și Smaranda L. Gotia. Enhancing Dental Radiographic Images in Spline-Type Spaces, *Publisher: IEEE*, 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), 2014, Pages: 559 - 564, DOI: 10.1109/SYNASC.2014.80, HOST.
7. **Darian M. Onchis**, Doina Frunzaverde, Mihail Gaiianu, Relu Ciubotariu. Multi-phase Identification in Microstructures Images Using a GPU Accelerated Fuzzy C-Means Segmentation, *Publisher: IEEE*, 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), 2014 Pages: 602 - 607, DOI: 10.1109/SYNASC.2014.86, HOST.
8. **Darian M. Onchis**, Gilbert-Rainer Gillich și Radu Frunza. Gradually improving the readability of the time-frequency spectra. *Publisher: IEEE*, Proceedings of the European Signal Processing Conference (EUSIPCO 2012), [Web of Science], NAHA.
9. Hans Feichtinger, **Darian M. Onchis**, Benjamin Ricaud, Bruno Torresani and Christoph Wiesmeyer. A method for optimizing the ambiguity function concentration. *Publisher: IEEE*, Proceedings of the European Signal Processing Conference (EUSIPCO 2012), [Web of Science], UNLOCKX.
10. Gilbert-Rainer Gillich, Zeno Praisach și **Darian M. Onchis**. How to correlate vibration measurements with FEM results to locate damages in beams. *Publisher: WSEAS*, 4th WSEAS International Conference on Finite Differences - Finite Elements - Finite Volumes - Boundary Elements, Paris, France, 2011, [Web of Science], EXCEL.
11. **Darian M. Onchis** și Gilbert-Rainer Gillich. Wavelet-Type Denoising for Mechanical Structures Diagnosis, *Publisher: WSEAS*, Proceedings of the 3rd WSEAS International Conference on engineering mechanics, structures, engineering geology (EMESEG '10). Corfu, Greece, 2010, [Web of Science], EXCEL.
12. Gilbert-Rainer Gillich, Zeno Praisach și **Darian M. Onchis**. About the Effectiveness of Damage Detection Methods based on Vibration Measurements. *Publisher: WSEAS*, Proceedings of the 3rd WSEAS International Conference on engineering mechanics, structures, engineering geology (EMESEG '10). Corfu, Greece, 2010, [Web of Science].





13. **Darian M. Onchis** și Hans Feichtinger. Constructive reconstruction from irregular sampling in multi-window spline-type spaces. *Publisher: World Sci. Publ.* Proceedings of the 7th ISAAC Congress, Imperial College London, World Scientific, 2009. Zbl 06162917, MR2766970, EUCETIFA.
14. **Darian M. Onchis**. Function Spaces for the Time-Frequency Analysis. *Publisher: Universitatea Aurel Vlaicu din Arad.* In Proceedings of the International Symposium on Mathematics, Aurel Vlaicu University, Arad, Romania, 2006.
15. **Darian M. Onchis** și Constantin Marta. Multiple 1D Parallel Wavelet Transform. *Publisher: IEEE.* Computer Society Press, Proc. of Synasc05, Los Alamitos, USA, 2005. [Web of Science].
16. **Darian M. Onchis**. Parallel Wavelet Transform for Stochastic Signals. *Publisher: Universitatea de Vest din Timisoara.* In Proceedings of the 9th National Conference of the Romanian Mathematical Society, Lugoj, Romania, 2005.
17. C.V. Anghel și **Darian M. Onchis**. Flexible algorithm for FFT parallel implementation. In Proceedings of the 3rd International Symposium Computational Civil Engineering, *Publisher: Ed. Societatii Academice.* Iasi, 2005.

#### Lista cărților și capitolelor de cărți

1. **Darian M. Onchis (autor unic).** *Matematici aplicate în economie*, carte, 175 pagini, Editura Eftimie Murgu, ISBN: 978-973-1906-99-7, 2011, EXCEL.
2. **Darian M. Onchis (autor unic).** Condition monitoring of assets using time-frequency methods, capitol, *Time-frequency signal analysis and processing, a comprehensive reference*, 2nd edition, Elsevier, Academic Press, ISBN: 978-0-12-398499-9 (editor Boualem Boashash, <https://www.elsevier.com/books/time-frequency-signal-analysis-and-processing/boashash/978-0-12-398499-9>), 2014, HOST.
3. **Darian M. Onchis (autor unic).** Multi-variate optimized Gabor frames for processing nD-data cubes, capitol, *Science and Supercomputing in Europe*, Bologna, Italia, ([http://www.hpc-europa.org/files/2012/Math\\_1129\\_ONCHIS\\_Darian.pdf](http://www.hpc-europa.org/files/2012/Math_1129_ONCHIS_Darian.pdf)), ISBN 978-88-86037-25-9, 2012, HPC4.
4. **Darian M. Onchis** și Alberto Marquez. Modern mathematical methods to reconstruct large scale dithered and jittered images, capitol, *Science and Supercomputing in Europe*, Bologna, Italia, ([http://www.hpc-europa.org/files/SSCinEurope/CD2010/contents/140\\_mathe-Onchis.pdf](http://www.hpc-europa.org/files/SSCinEurope/CD2010/contents/140_mathe-Onchis.pdf)), ISBN 978-88-86037-23-5, 2010, HPC3.
5. Esperanza Suarez Sanchez și **Darian M. Onchis**. Rectilinear representations of graphs and 2-complexes using parallel algorithms, capitol, *Science and Supercomputing in Europe*, Bologna, Italy, (<http://www.hpc-europa.eu/files/SSCinEurope/CD2007/contents/160-math-Suarez.pdf>), ISBN 978-88-86037-21-1, 2007, NAHA.
6. **Darian M. Onchis (autor unic).** Parallel adaptive fast wavelet transformation for 1D signals, capitol, *Science and Supercomputing in Europe*, Bologna, Italia, ISBN: 88-86037-17-1, (<http://www.hpc-europa.eu/files/SSCinEurope/CD2005/content/010-Mathematics.pdf>), 2005, HPC2.
7. **Darian M. Onchis (autor unic).** Real-time parallel wavelet transform for highly nonlinear stochastic signals, capitol, *Science and Supercomputing in Europe*, Bologna, Italy, ISBN: 88-86037-



17-1. (<http://www.hpc-europa.eu/files/SSCinEurope/CD2005/content/011-Mathematics.pdf>), 2005, HPC1.

#### **Lista articolelor indexate în alte baze de date internaționale (selecție)**

1. **Darian M. Onchis** și Pedro Real. Gabor frames and topology-based strategies for de-fringing images. Revista Imagen-A, Vol. I - Número 3 – 2010. ISSN:1885-4508, ESO.
2. **Darian M. Onchis**. Note about the dual atoms in spline-type spaces, Analele Universitatii din Timisoara, seria Matematica-Informatica, vol XVII, 2009, NAHA.
3. Ovidiu Vasile, **Darian M. Onchis**. Attenuation Analysis and Acoustic Pressure Levels for Combined Absorptive Mufflers. Analele Universitatii Eftimie Murgu, Engineering, 2011, EXCEL.
4. **Darian M. Onchis**. Common agriculture policy through a mathematician eyes. Analele Universitatii Eftimie Murgu, Economics, 2011.
5. **Darian M. Onchis**, Mihail Gaianu, Ovidiu Vasile. Pipeline Analyzer using the Fractional Fourier Transform for Engine Control and Satellites Data. Analele Universitatii Eftimie Murgu, Engineering, 2011, EXCEL.
6. **Darian M. Onchis**, Gilbert-Rainer Gillich, Zeno-Iosif Praisach, Esperanza Maria Suarez- Sanchez. Intelligent Agent for Damages Detection. Analele Universitatii Eftimie Murgu, Engineering, 2010, EXCEL.
7. Constantin Popp și **Darian M. Onchis**. On the Remez algorithm. Analele Universitatii Eftimie Murgu, 2010.

