

List of Publications

Alfredo Antonio Núñez Vicencio
February 2024

International journal papers

- [J73]** T. Kapoor, H. Wang, A. Núñez, and R. Dollevoet, "Physics-informed neural networks for solving forward and inverse problems in complex beam systems." *IEEE Transactions on Neural Networks and Learning Systems*, DOI: 10.1109/TNNLS.2023.3310585 (IF 2022: 10.4, **Q1**).
- [J72]** T. Vernailen, L. Wang, A. Núñez, R. Dollevoet, Z. Li, "Rail wear rate on the Belgian railway network – a big-data analysis." Accepted, *International Journal of Rail Transportation*, DOI: 10.1080/23248378.2023.2259392 (IF 2022: 4.0, **Q2**).
- [J71]** S. Unsiwilai, C. Shen, Y. Zeng, L. Wang, A. Núñez, and Z. Li, "Vertical dynamic measurements of a railway transition zone: a case study in Sweden." Accepted, *Journal of Civil Structural Health Monitoring*, DOI: 10.1007/s13349-024-00766-0 (IF 2022: 4.4, **Q1**).
- [J70]** Y. Zeng, A. Núñez, Z. Li, "Railway sleeper vibration measurement by train-borne laser Doppler vibrometer and its speed-dependent characteristics." Accepted, *Computer-Aided Civil and Infrastructure Engineering*. DOI: 10.1111/mice.13150 (IF 2022: 9.6, **Q1**).
- [J69]** T. Kapoor, H. Wang, A. Núñez and R. Dollevoet, "Transfer learning for improved generalizability in causal physics-informed neural networks for beam simulations." *Engineering Applications of Artificial Intelligence*, Volume 133, Part A, July 2024, 108085, DOI: 10.1016/j.engappai.2024.108085 (IF 2022: 8.0, **Q1**).
- [J68]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Energy use and greenhouse gas emissions of traction alternatives for regional railways." *Energy Conversion and Management*, Volume 303, March 2024, 118202, DOI: 10.1016/j.enconman.2024.118202 (IF 2022: 10.4, **Q1**).
- [J67]** Z. Li, S. Li, P. Zhang, A. Núñez, and R. Dollevoet, "Mechanism of short pitch corrugation: Initial excitation and frequency development for consistent initiation and growth". *International Journal of Rail Transportation*, Volume 12, Issue 1, Pages: 1-36, 2024. DOI: 10.1080/23248378.2022.2156402 (IF 2022: 4.0, **Q2**)
- [J66]** R. Morales, L.G. Marin, T. Roje, V. Caquilpan, D. Sáez, and A. Núñez, "Microgrid planning based on computational intelligence methods for rural communities: a case study in Jose Paineicura mapuche community, Chile." *Expert Systems with Applications*, Volume 235, January 2024, 121179. DOI: 10.1016/j.eswa.2023.121179 (IF 2022: 8.5, **Q1**).
- [J65]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Energy model of a fuel cell hybrid-electric regional train in passenger transport service and vehicle-to-grid applications." *Journal of Rail Transport Planning & Management*, Volume 28, December 2023, 100415. DOI: 10.1016/j.jrtpm.2023.100415 (IF 2022: 3.7, **Q3**)
- [J64]** W. Phusakulkajorn, A. Núñez, H. Wang, A. Jamshidi, A. Zoeteman, B. Ripke, R. Dollevoet, B. De Schutter and Z. Li, "Artificial intelligence in railway infrastructure: current research, challenges, and future opportunities." *Intelligent Transportation Infrastructure*, Volume 2, 2023, liad016, DOI: 10.1093/iti/liad016
- [J63]** Y. Zeng, C. Shen, A. Núñez, R. Dollevoet, W. Zhang, and Z. Li, "An interpretable method for operational modal analysis in time-frequency representation and its applications to railway sleepers." *Structural Control and Health Monitoring*, Volume 2023, 6420772, 2023. DOI: 10.1155/2023/6420772 (IF 2022: 5.4, **Q1**)
- [J62]** S. Unsiwilai, L. Wang, A. Núñez and Z. Li, "Multiple-axle box acceleration measurements at railway transition zones." *Measurement*, Volume 213, May 2023, 112688. DOI: 10.1016/j.measurement.2023.112688 (IF 2022: 5.6, **Q1**)
- [J61]** J. Fu, S. Peyghami, A. Núñez, F. Blaabjerg, and B. De Schutter, "A tractable failure probability prediction model for predictive maintenance scheduling of large-scale modular-multilevel-converters." *IEEE Transactions on Power Electronics*, Volume 38, Issue 5, May 2023, Pages: 6533 - 6544. DOI: 10.1109/TPEL.2023.3241317 (IF 2022: 6.7, **Q1**)
- [J60]** J. Fu, A. Núñez, and B. De Schutter, "A bidding mechanism for the maintenance of generation units considering inter-ISO power exchange." *International Journal of Electrical Power & Energy Systems*, Volume 144, January 2023, 108595. DOI: 10.1016/j.ijepes.2022.108595 (IF 2022: 5.2, **Q1**)
- [J59]** J. Fu, A. Núñez, and B. De Schutter, "Accelerated optimal maintenance scheduling for generation units on a truthful platform." *Energy Reports*, Volume 8, November 2022, Pages: 9777-9786. DOI: 10.1016/j.egyr.2022.08.002 (IF 2022: 5.2, **Q2**)
- [J58]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Analysis of hydrogen-powered propulsion system alternatives for diesel-electric regional trains." *Journal of Rail Transport Planning & Management*, Volume 23, September 2022, 100338, DOI: 10.1016/j.jrtpm.2022.100338 (IF 2022: 3.7, **Q3**)
- [J57]** Y. Zhen, A. Núñez, and Z. Li, "Speckle noise reduction for structural vibration measurement with laser doppler vibrometer on the moving platform." *Mechanical Systems and Signal Processing*, Volume 178, October 2022, 109196, DOI: 10.1016/j.ymsp.2022.109196 (IF 2021: 8.934, **Q1**)
- [J56]** J. Fu, A. Núñez, and B. De Schutter, "Real-time UAV routing strategy for monitoring and inspection for post-disaster restoration of distribution networks." *IEEE Transactions on Industrial Informatics*, Volume 18, Issue 4, April 2022, Pages: 2582-2592. DOI: 10.1109/TII.2021.3098506 (IF 2021: 11.648, **Q1**)
- [J55]** J. Zhong, Z. Liu, C. Yang, H. Wang, S. Gao, and A. Núñez, "Adversarial reconstruction based on tighter oriented localization for catenary insulator defect detection in high-speed railways." *IEEE Transactions on Intelligent Transportation Systems*, Volume 23, Issue 2, February 2022, Pages: 1109-1120. DOI: 10.1109/TITS.2020.3020287 (IF 2021: 9.551, **Q1**)
- [J54]** P. Zhang, S. Li, A. Núñez, and Z. Li, "Vibration modes and wave propagation of the rail under fastening constraint." *Mechanical Systems and Signal Processing*, Volume 160, November 2021, 107933, DOI: 10.1016/j.ymsp.2021.107933 (IF 2020: 6.823, **Q1**).
- [J53]** F. Yang, Z. Wei, X. Sun, C. Shen, and A. Núñez, "Wheel-rail rolling contact behavior induced by both rail surface irregularity and sleeper hanging defects on a high-speed railway line." *Engineering Failure Analysis*, Volume 128, October 2021, 105604, DOI: 10.1016/j.engfailanal.2021.105604 (IF 2020: 3.114, **Q1**)

- [J52]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Reducing fuel consumption and related emissions through optimal sizing of energy storage system for diesel-electric trains." *Applied Energy*, Volume 294, July 2021, 117018. DOI: 10.1016/j.apenergy.2021.117018 (IF 2020: 9.746, **Q1**)
- [J51]** J. Zhong, Z. Liu, H. Wang, W. Liu, C. Yang, Z. Han, and A. Núñez, "A looseness detection method for railway catenary fasteners based on reinforcement learning refined localization." *IEEE Transactions on Instrumentation and Measurements*, Volume 70, June 2021, Pages: 1-13. DOI: 10.1109/TIM.2021.3086913 (IF 2020: 4.016, **Q1**)
- [J50]** J. Fu, A. Núñez, and B. De Schutter, "A short-term preventive maintenance scheduling method for distribution networks with distributed generators and batteries." *IEEE Transactions on Power Systems*, Volume 36, Issue 3, May 2021, Pages: 2516-2531. DOI: 10.1109/TPWRS.2020.3037558 (IF 2020: 6.663, **Q1**)
- [J49]** W. Liu, Z. Liu, Q. Li, Z. Han, and A. Núñez, "High-precision detection method for structure parameters of catenary cantilever devices using 3D point cloud data." *IEEE Transactions on Instrumentation and Measurement*, Volume 70, 3507811, 2021, Pages: 1-11. DOI: 10.1109/TIM.2020.3045801 (IF 2020: 4.016, **Q1**)
- [J48]** P. Zhang, S. Li, A. Núñez, and Z. Li, "Multimodal dispersive waves in free rail: numerical modeling and experimental validation." *Mechanical Systems and Signal Processing*, Volume 150, March 2021, 107305. DOI: 10.1016/j.ymssp.2020.107305 (IF 2020: 6.823, **Q1**)
- [J47]** H. Wang, A. Núñez, Z. Liu, D. Zhang, and R. Dollevoet, "A Bayesian network approach for the condition monitoring of high-speed railway catenary." *IEEE Transactions on Intelligent Transportation Systems*, Volume 21, October 2020, Pages: 4037-4051. DOI: 10.1109/TITS.2019.2934346 (IF 2019: 6.319, **Q1**)
- [J46]** Z. Li, M. Berg, D. Fletcher, P. Meehan, and A. Núñez, "Special issue of Wear on Contact Mechanics 2018." *Wear*, July 2020, Article 203362. DOI: 10.1016/j.wear.2020.203362 (IF 2019: 4.108, **Q1**)
- [J45]** W. Liu, Z. Liu, A. Núñez, and Z. Han, "Unified deep learning architecture for the detection of all catenary support components." *IEEE Access*, Volume 8, 2020, Pages: 17049-17059. DOI: 10.1109/ACCESS.2020.2967831 (IF 2019: 3.745, **Q1**)
- [J44]** Z. Wei, A. Núñez, X. Liu, R. Dollevoet, and Z. Li, "Multi-criteria evaluation of wheel/rail matching behavior at railway crossings." *Tribology International*, Volume 144, April 2020, 106107. DOI: 10.1016/j.triboint.2019.106107 (IF 2019: 4.271, **Q1**)
- [J43]** L.G. Marín, M. Sumner, D. Muñoz-Carpintero, S. Pholboon, D. Kobrich, D. Saez, and A. Núñez, "Hierarchical energy management system for microgrid operation based on robust model predictive control." *Energies* 2019, 12(23), 4453, November 2019. DOI: 10.3390/en12234453 (IF 2019: 2.702, **Q3**)
- [J42]** H. Wang, Z. Liu, A. Núñez, and R. Dollevoet, "Entropy-based local irregularity detection for high-speed railway catenaries with frequent inspections." *IEEE Transactions on Instrumentation and Measurement*, Volume 68, Issue 10, October 2019, Pages: 3536-3547. DOI: 10.1109/TIM.2018.2881529 (IF 2019: 3.658, **Q1**)
- [J41]** Z. Su, A. Jamshidi, A. Núñez, S. Baldi, and B. De Schutter, "Integrated condition-based track maintenance planning and crew scheduling of railway networks." *Transportation Research Part C: Emerging Technologies*, Volume 105, August 2019, Pages: 359-384. DOI: 10.1016/j.trc.2019.05.045 (IF 2019: 6.077, **Q1**)
- [J40]** P. Santis, D. Sáez, R. Cárdenas, and A. Núñez, "Pareto-based modulated-model-predictive control strategy for power converter applications." *Electric Power Systems Research*, Volume 171, June 2019, Pages: 158-174. DOI: 10.1016/j.epr.2019.02.016 (IF 2019: 3.211, **Q2**)
- [J39]** L. Marin, N. Cruz, D. Sáez, M. Sumner and A. Núñez, "Prediction interval methodology based on fuzzy numbers and its extension to fuzzy systems and neural networks." *Expert Systems with Applications*. Volume 119, April 2019, Pages: 128-141. DOI: 10.1016/j.eswa.2018.10.043 (IF 2019: 5.452, **Q1**)
- [J38]** A. Núñez, A. Jamshidi, and H. Wang, "Pareto-based maintenance decisions for regional railways with uncertain weld conditions using the Hilbert spectrum of axle box acceleration." *IEEE Transactions on Industrial Informatics*, Volume 15, Issue 3, March 2019, Pages: 1496-1507. DOI: 10.1109/TII.2018.2847736 (IF 2019: 9.112, **Q1**)
- [J37]** Z. Wei, A. Boogaard, A. Núñez, Z. Li, and R. Dollevoet, "An integrated approach for characterizing the dynamic behavior of wheel-rail interaction at crossings." *IEEE Transactions on Instrumentation and Measurement*, Volume 67, Issue 10, October 2018, Pages: 2332-2344. DOI: 10.1109/TIM.2018.2816800 (IF 2019: 3.658, **Q1**)
- [J36]** A. Jamshidi, S. Hajizadeh, Z. Su, M. Naeimi, A. Núñez, R. Dollevoet, B. De Schutter, and Zili Li, "A decision support approach for condition-based maintenance of rails based on big data analysis." *Transportation Research Part C: Emerging Technologies*, Volume 95, October 2018, Pages: 185-206. DOI: 10.1016/j.trc.2018.07.007 (IF 2019: 6.077, **Q1**)
- [J35]** H. Wang, A. Núñez, Z. Liu, Y. Song, F. Duan, and R. Dollevoet, "Analysis of the evolvement of contact wire wear irregularity in railway catenary based on historical data." *Vehicle System Dynamics*, Volume 56, Issue 8, Pages: 1207-1232. DOI: 10.1080/00423114.2017.1408919 (IF 2019: 2.581, **Q2**)
- [J34]** Z. Wei, A. Núñez, A. Boogaard, R. Dollevoet, and Z. Li, "Method for evaluating the performance of railway crossings after long-term service." *Tribology International*, Volume 123, July 2018, Pages: 337-348. DOI: 10.1016/j.triboint.2018.03.016 (IF 2019: 4.271, **Q1**)
- [J33]** J. Chen, Z. Liu, H. Wang, A. Núñez, and Z. Han, "Automatic defect detection of fasteners on the catenary support device using deep convolutional neural network." *IEEE Transactions on Instrumentation and Measurement*, Volume 67, Issue 2, February 2018, Pages: 257-269. DOI: 10.1109/TIM.2017.2775345 (IF 2019: 3.658, **Q1**). *As of July/August 2020, this paper is in the highly cited list, the top 1% of the field Engineering, Data from Essential Science Indicators (ISI-Web of Science).*
- [J32]** Z. Su, A. Jamshidi, A. Núñez, S. Baldi, and B. De Schutter, "Multilevel condition-based maintenance planning for railway infrastructures – A scenario-based chance-constrained approach." *Transportation Research Part C: Emerging Technologies*, Volume 84, November 2017, Pages: 92-123. DOI: 10.1016/j.trc.2017.08.018 (IF 2019: 6.077, **Q1**)
- [J31]** Z. Hidayat, R. Babuška A. Núñez, and B. De Schutter, "Identification of distributed-parameter systems from sparse measurements." *Applied Mathematical Modelling*, Volume 51, November 2017, Pages: 605-626. DOI: 10.1016/j.apm.2017.07.001 (IF 2019: 3.633, **Q1**)

- [J30]** Z. Wei, A. Núñez, Z. Li, and R. Dollevoet, "Evaluating degradation at railway crossings using axle box acceleration measurements." *Sensors*, 2017 17(10), 2236, September 2017. DOI:10.3390/s17102236 (IF 2019: 3.275, **Q1**)
- [J29]** A. Jamshidi, A. Núñez, R. Dollevoet, and Z. Li, "Robust and predictive fuzzy key performance indicators for condition-based treatment of squats in railway infrastructures." *Journal of Infrastructure Systems*, Volume 23, Issue 3, September 2017, 04017006. DOI: 10.1061/(ASCE)IS.1943-555X.0000357 (IF 2019: 1.825, **Q2**)
- [J28]** A. Jamshidi, S. Faghih-Roohi, S. Hajizadeh, A. Núñez, R. Babuška, R. Dollevoet, Z. Li, and B. De Schutter, "A big data analysis approach for rail failure risk assessment." *Risk Analysis*. Volume 37, Issue 8, August 2017, Pages: 1495-1507. DOI: 10.1111/risa.12836 (IF 2019: 3.137, **Q1**)
- [J27]** S. Li, Z. Li, A. Núñez, and R. Dollevoet, "New insights into the short pitch corrugation development enigma based on 3D-FE dynamic vehicle-track coupled modeling in frictional rolling contact." *Applied Sciences*, 2017 7(8), 807, August 2017. DOI: 10.3390/app7080807 (IF 2019: 2.474, **Q2**)
- [J26]** M. Oregui, A. Núñez, R. Dollevoet, and Z. Li, "Sensitivity analysis of railpad parameters on vertical railway track dynamics." *ASCE Journal of Engineering Mechanics*, Volume 143, Issue 5, May 2017. DOI: 10.1061/(ASCE)EM.1943-7889.0001207 (IF 2019: 2.003, **Q2**)
- [J25]** J. Llanos, R. Morales, A. Núñez, D. Sáez, M. Lacalle, L.G. Marín, R. Hernández, and F. Lanás, "Load estimation for microgrid planning based on a self-organizing map methodology." *Applied Soft Computing*, Volume 53, April 2017, Pages: 323-335. DOI: 10.1016/j.asoc.2016.12.054 (IF 2019: 5.472, **Q1**)
- [J24]** M. Oregui, S. Li, A. Núñez, Z. Li, R. Carroll, and R. Dollevoet, "Monitoring bolt tightness of rail joints using axle box acceleration measurements." *Structural Control and Health Monitoring*, Volume 24:e1848, February 2017. DOI: 10.1002/stc.1848 (IF 2019: 3.499, **Q1**)
- [J23]** Z. Liu, H. Wang, R. Dollevoet, Y. Song, A. Núñez, J. Zhang, "Ensemble EMD-based automatic extraction of the catenary structure wavelength from the pantograph-catenary contact force." *IEEE Transactions on Instrumentation and Measurement*, Volume 65, Issue 10, October 2016, Pages: 2272-2283. DOI: 10.1109/TIM.2016.2579360 (IF 2019: 3.658, **Q1**)
- [J22]** C. Portilla, F. Valencia, J. Espinosa, A. Núñez, and B. De Schutter, "Model-based predictive control for bicycling in urban intersections." *Transportation Research Part C: Emerging Technologies*, Volume 70, September 2016, Pages: 27-41. DOI: 10.1016/j.trc.2015.11.016 (IF 2019: 6.077, **Q1**)
- [J21]** M. Molodova, M. Oregui, A. Núñez, Z. Li, and R. Dollevoet, "Health condition monitoring of insulated joints based on axle box acceleration measurements." *Engineering Structures*, Volume 123, September 2016, Pages: 225-235. DOI: 10.1016/j.engstruct.2016.05.018 (IF 2019: 3.548, **Q1**)
- [J20]** C. Ponce, D. Sáez, C. Bordons, and A. Núñez, "Dynamic simulator and model predictive control of an integrated solar combined cycle plant." *Energy*, Volume 109, Issue 2016, August 2016, Pages: 974-986. DOI: 10.1016/j.energy.2016.04.129 (IF 2019: 6.082, **Q1**)
- [J19]** S. Liu, A.D. Sadowska, J.R.D. Frejo, A. Núñez, E.F. Camacho, H. Hellendoorn, and B. De Schutter, "Robust receding horizon parameterized control for multi-class freeway networks: A tractable scenario-based approach." *International Journal of Robust and Nonlinear Control*, Volume 26, Issue 6, April 2016, Pages: 1211-1245. DOI: 10.1002/rnc.3500 (IF 2019: 3.503, **Q1**)
- [J18]** M. Molodova, Z. Li, A. Núñez, and R. Dollevoet, "Parameter study of the axle box acceleration at squats." *Proceedings of the Institution of Mechanical Engineers Part F: Journal of Rail and Rapid Transit*, Volume 229, Issue 8, November 2015, Pages: 841-851. DOI: 10.1177/0954409714523583 (IF 2019: 1.228, **Q3**)
- [J17]** M. Oregui, M. Molodova, A. Núñez, Z. Li, R. Dollevoet, "Experimental investigation into the condition of insulated rail joints by impact excitation." *Experimental Mechanics*, Volume 55, Issue 9, November 2015, Pages: 1597-1612. DOI: 10.1007/s11340-015-0048-7 (Open Access). (IF 2019: 2.496, **Q2**)
- [J16]** A. Núñez, C. Ocampo-Martinez, J.M. Maestre, and B. De Schutter, "Time-varying scheme for non-centralized model predictive control of large-scale systems." *Mathematical Problems in Engineering*, Volume 2015, Article ID 560702, August 2015, 17 Pages. DOI: 10.1155/2015/560702 (Open Access) (IF 2019: 1.009, **Q3**)
- [J15]** Z. Li, M. Molodova, A. Núñez, and R. Dollevoet, "Improvements in axle box acceleration measurements for the detection of light squats in railway infrastructure." *IEEE Transactions on Industrial Electronics*, Volume 62, Issue 7, July 2015, Pages: 4385-4397. DOI: 10.1109/TIE.2015.2389761 (IF 2019: 7.515, **Q1**)
- [J14]** D. Muñoz, D. Sáez, C.E. Cortés, and A. Núñez, "A methodology based on evolutionary algorithms to solve dynamic pick-up and delivery problem under hybrid predictive control approach." *Transportation Science*, Volume 49, Issue 2, May 2015, Pages: 239-253. DOI: 10.1287/trsc.2014.0569 (IF 2019: 3.384, **Q2**)
- [J13]** A. Núñez, C.E. Cortés, D. Sáez, B. De Schutter and M. Gendreau, "Multiobjective model predictive control for dynamic pickup and delivery problems." *Control Engineering Practice*, Volume 32, November 2014, Pages: 73-86. DOI: 10.1016/j.conengprac.2014.07.004 (IF 2019: 3.193, **Q2**)
- [J12]** M. Molodova, Z. Li, A. Núñez, and R. Dollevoet, "Automatic detection of squats in the railway infrastructures." *IEEE Transactions on Intelligent Transportation Systems*, Volume 15, Issue 5, October 2014, Pages: 1980-1990. DOI: 10.1109/TITS.2014.2307955 (IF 2019: 6.319, **Q1**)
- [J11]** J.R. Frejo, A. Núñez, B. De Schutter, and E.F. Camacho, "Hybrid model predictive control for freeway traffic using discrete speed limit signals." *Transportation Research Part C: Emerging Technologies*, Volume 46, September 2014, Pages: 309-325. DOI: 10.1016/j.trc.2014.06.005 (IF 2019: 6.077, **Q1**)
- [J10]** M. Molodova, Z. Li, A. Núñez, and R. Dollevoet, "Validation of a finite element model for axle box acceleration at squats in the high-frequency range." *Computers and Structures*, Volume 141, Issue 1, August 2014, Pages: 84-93. DOI: 10.1016/j.compstruc.2014.05.005 (IF 2019: 3.664, **Q1**)
- [J09]** C. Ponce, D. Sáez, and A. Nuñez, "Fuzzy predictive control strategy for a distributed solar collector plant," *IEEE Latin America Transactions*, Volume 12, Issue 4, June 2014, Pages: 626-633. DOI: 10.1109/TLA.2014.6868864 (IF 2019: 0.782, **Q4**)

- [J08]** A. Núñez, B. De Schutter, D. Sáez, and I. Škrjanc, "Hybrid-fuzzy modeling and identification," *Applied Soft Computing*, Volume 17, April 2014, Pages: 67-78. DOI: 10.1016/j.asoc.2013.12.011 (IF 2019: 5.472, **Q1**)
- [J07]** D. Sáez, C.E. Cortés, F. Milla, A. Núñez, A. Tirachini, and M. Riquelme, "Hybrid predictive control strategy for a public transport system with uncertain demand," *Transportmetrica*, Volume 8, Issue 1, January 2012, Pages: 61-86. DOI: 10.1080/18128601003615535 (IF 2014: 3.773, **Q1**, this journal became two new journals Part A and B)
- [J06]** C.E. Cortés, D. Sáez, F. Milla, A. Núñez, and M. Riquelme, "Hybrid predictive control for real-time optimization of public transport system' operations based on evolutionary multiobjective optimization," *Transportation Research Part C: Emerging Technologies*, Volume 18, Issue 5, October 2010, Pages: 757-769. DOI: 10.1016/j.trc.2009.05.016 (IF 2019: 6.077, **Q1**)
- [J05]** C.E. Cortés, D. Sáez, A. Núñez, and D. Muñoz-Carpintero, "Hybrid adaptive predictive control for a dynamic pick-up and delivery problem," *Transportation Science*, Volume 43, Issue 1, February 2009, Pages: 27-42. DOI: 10.1287/trsc.1080.0251 (IF 2019: 3.384, **Q2**)
- [J04]** A. Núñez, D. Sáez, S. Oblak, and I. Škrjanc, "Fuzzy-model-based hybrid predictive control," *ISA Transactions*, Volume 48, Issue 1, January 2009, Pages: 24-31. DOI: 10.1016/j.isatra.2008.10.007 (IF 2019: 4.305, **Q1**)
- [J03]** J. Causa, G. Karer, A. Núñez, D. Sáez, I. Škrjanc, and B. Zupančič, "Hybrid fuzzy predictive control based on genetic algorithm for the temperature control of a batch reactor," *Computers & Chemical Engineering*, Volume 32, Issue 12, December 2008, Pages: 3254-3263. DOI: 10.1016/j.compchemeng.2008.05.014 (IF 2019: 4.000, **Q1**)
- [J02]** D. Sáez, C.E. Cortés, and A. Núñez, "Hybrid adaptive predictive control for the multi-vehicle dynamic pick-up and delivery problem based on genetic algorithms and fuzzy clustering," *Computers & Operations Research*, Volume 35, Issue 11, November 2008, Pages: 3412-3438. DOI: 10.1016/j.cor.2007.01.025 (IF 2019: 3.424, **Q2**)
- [J01]** C.E. Cortés, A. Núñez, and D. Sáez, "Hybrid adaptive predictive control for a dynamic pick-up and delivery problem including traffic congestion," *International Journal of Adaptive Control and Signal Processing*, Volume 22, Issue 2, March 2008, Pages: 103-123. DOI: 10.1002/acs.1005 (IF 2019: 2.116, **Q3**)

Books

- [B02]** Z. Li and A. Núñez (Editors), *Proceedings of the 11th International Conference on Contact Mechanics and Wear of Rail/Wheel Systems (CM 2018)*, Delft, The Netherlands, September 24-27, 2018. ISBN: 978-94-6186-963-0, ISSN: 2590-0609.
- [B01]** A. Núñez, D. Sáez, and C.E. Cortés, *Hybrid predictive control for dynamic transport problems*, Springer-Verlag London, Series Advances in Industrial Control, England. Publication Date: October 31, 2012 | ISBN-10: 1447143507 | ISBN-13: 978-1447143505 | Edition: 2013.

Book chapters

- [BCh02]** Z. Su, A. Jamshidi, A. Núñez, S. Baldi, and B. De Schutter, "Distributed Chance-Constrained Model Predictive Control for Condition-based Maintenance Planning for Railway Infrastructures," in *Predictive Maintenance in Dynamic Systems, Advanced Methods, Decision Support Tools and Real-World Applications*, (E. Lughofer, and M. Sayed-Mouchaweh, eds.), Springer. ISBN 978-3-030-05644-5, pp 533-554, 2019. DOI: 10.1007/978-3-030-05645-2_18
- [BCh01]** F. Valencia, J.D. López, A. Núñez, C. Portilla, L.G. Cortes, J.J. Espinosa, and B. De Schutter, "Congestion Management in Motorways and Urban Networks Through a Bargaining Game-Based Coordination Mechanism," Chapter 1 in *Game-Theoretic Analysis of Congestion, Safety, and Security*, Traffic and Transportation Theory, (K. Hausken, and J. Zhuang, eds.), vol. 1 of Series in Reliability Engineering, Springer, ISBN 978-3-319-11673-0, pp. 1-40, 2014. DOI: 10.1007/978-3-319-11674-7_1

Lecture notes

- [LN01]** R. Manasevich and A. Núñez, *Ordinary differential equations (in Spanish)*, Lecture Notes of the Course "Differential Equations," Mathematics Engineering Department (DIM), Universidad de Chile, 327 pp., Mar. 2009. Revised edition.

Conference papers

- [C85]** L. Wang, S. Unsiwilai, Y. Zeng, C. Shen, J. Hendriks, J. Moraal, A. Zoeterman, A. Núñez, R. Dollevoet, and Z. Li, "Condition monitoring of railway transition zones using acceleration measurements on multiple axle boxes: Case studies in the Netherlands, Sweden, and Norway," In Proceedings of the 10th Transport Research Arena Conference (TRA2024), 15-18 April 2024, Dublin, Ireland.
- [C84]** W. Phusakulkajorn, J. Hendriks, J. Moraal, C. Shen, Y. Zeng, S. Unsiwilai, B. Bogojevic, M. Asplund, A. Zoeteman, A. Núñez, R. Dollevoet, and Z. Li, "Detection of rail surface defects based on axle box acceleration measurements: A measurement campaign in Sweden," In Proceedings of the 10th Transport Research Arena Conference (TRA2024), 15-18 April 2024, Dublin, Ireland.
- [C83]** T. Kapoor, A. Chandra, Tartakovsky, H. Wang, A. Nunez, and R. Dollevoet, "Neural oscillators for generalization of physics-informed machine learning." In Proceedings of The 38th Annual AAAI Conference on Artificial Intelligence, February 20-27, 2024, Vancouver, Canada.
- [C82]** T. Kapoor, A. Chandra, Tartakovsky, H. Wang, A. Nunez, and R. Dollevoet, "Neural oscillators for generalizing parametric PDEs." In Proceedings of the NeurIPS 2023 Workshop: The Symbiosis of Deep Learning and Differential Equations III, December 10-16, 2023, New Orleans, USA.
- [C81]** Y. Zeng, A. Núñez, and Z. Li, "Incorporating Modal Testing into Dynamic Load Identification from Structural Vibration Measurement." In Proceedings of the 14th International Workshop on Structural Health Monitoring, Stanford University, CA, USA, September 12-14, 2023.

- [C80]** Y. Zeng, A. Núñez, and Z. Li, "A simulation-based approach for characterizing transfer functions of railway tracks using train-borne laser Doppler vibrometer." In Proceedings of the 10th International Conference on Experimental Vibration Analysis for Civil Engineering Structures, Politecnico di Milano, Italy, August 30 – September 1, 2023.
- [C79]** T. Kapoor, H. Wang, A. Núñez, and R. Dollevoet, "Physics-informed machine learning for moving load problems". In Proceedings of the Eurodyn 2023, XII International Conference on Structural Dynamics, Delft, The Netherlands, 2-5 July 2023.
- [C78]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Vehicle-to-Grid Concept for Hydrogen Fuel Cell Hybrid-Electric Regional Trains". In Proceedings of the 10th International Conference on Railway Operations Modelling and Analysis ICROMA RailBelgrade 2023, April 25-28 2023, Belgrade, Serbia. *This paper was selected in the group of best papers of RailBelgrade 2021.*
- [C77]** Y. Zeng, A. Núñez, and Z. Li, "A post-processing methodology for reducing speckle noise in laser Doppler vibrometer measurements". In Proceedings of the International Meeting on Optical Measurement Techniques and Industrial Applications, 28-30 March 2023, Delft, The Netherlands.
- [C76]** T. Kapoor, H. Wang, A. Núñez, and R. Dollevoet, "Predicting traction return current in electric railway systems through physics-informed neural networks". In Proceedings of the IEEE Symposium Series on Computational Intelligence, 4 to 7 December 2022, Singapore.
- [C75]** W. Phusakulkajorn, J. Moraal, J. Hendriks, A. Núñez, R. Dollevoet, and Z. Li, "A multiple spiking neural network architecture based on fuzzy intervals for anomaly detection: a case study of rail defects." In Proceedings of the World Congress on Computational Intelligence (WCCI2022), 18-23 July 2022, Padova, Italy.
- [C74]** M. Kapetanović, N. Bešinović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Optimal network electrification plan for operation of battery-electric multiple unit regional trains". In Proceedings of the 11th Triennial Symposium on Transportation Analysis Conference (TRISTAN2022), June 19-25, 2022, Mauritius Island.
- [C73]** Y. Zeng, C. Shen, A. Núñez, R. Dollevoet, and Z. Li, "A preliminary feasibility study on operational modal identification of in-situ railway sleeper." Proceedings of the 10th European Workshop on Structural Health Monitoring, Palermo, Italy, July 4-7, 2022.
- [C72]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Life cycle assessment of alternative traction options for non-electrified regional railway lines." In Proceedings of the World Congress on Railway Research 2022, June 6-10, 2022, Birmingham, United Kingdom.
- [C71]** H. Wang, J. Hendriks, R. Dollevoet, A. Zoeteman, and A. Núñez "Intelligent data fusion for anomaly detection in Dutch railway catenary condition monitoring." In Proceedings of the World Congress on Railway Research 2022, June 6-10, 2022, Birmingham, United Kingdom.
- [C70]** M. Kapetanović, A. Núñez, N. van Oort, and R.M.P. Goverde, "Analysis of hydrogen-powered propulsion system alternatives for diesel-electric multiple unit regional trains." Proceedings of the 9th International Conference on Railway Operations Modelling and Analysis, RailBeijing2021, November 3-7, 2021, Beijing, China. *This paper was selected in the group of best papers of RailBeijing 2021.*
- [C69]** J. Zhong, Z. Liu, H. Wang, W. Liu, C. Yang, and A. Núñez, "Action-driven reinforcement learning for improving localization of brace sleeve in railway catenary." Proceedings of the International Conference on Sensing, Measurement & Data Analytics in the Era of Artificial Intelligence, October 15-17, 2020, Xian, China.
- [C68]** W. Liu, Z. Liu, and A. Núñez, "Virtual reality and convolutional neural networks for railway catenary support components monitoring." Proceedings of the 22nd IEEE International Conference on Intelligent Transportation Systems, Auckland, New Zealand, October 27-30, 2019. DOI: 10.1109/ITSC.2019.8917061
- [C67]** M. Kapetanović, N. van Oort, A. Núñez, R.M.P. Goverde, "Sustainability of railway passenger services – A review of aspects, issues, contributions and challenges of life cycle emissions." Proceedings of 8th International Conference on Railway Operations Modelling and Analysis (ICROMA), RailNorrköping2019, June 17-20, 2019, Norrköping, Sweden.
- [C66]** M. Faris, A. Núñez, Z. Su, and B. De Schutter, "Distributed optimization for railway track maintenance operations planning." Proceedings of the 21st IEEE International Conference on Intelligent Transportation Systems, Maui, Hawaii, USA, November 4-7, 2018. DOI: 10.1109/ITSC.2018.8569335
- [C65]** R. Schalk, A. Zoeteman, and A. Núñez, "Lessons learned from data analytics applied to the track maintenance of the Dutch high-speed line." Proceedings of the Sixth Symposium on Life-Cycle Civil Engineering (IALCCE 2018), Ghent, Belgium, October 28-31, 2018.
- [C64]** A. Núñez, A. Jamshidi, H. Wang, J. Hendriks, I. Ramirez, J. Moraal, R. Dollevoet, and Z. Li, "A condition-based maintenance methodology for rails in regional railway networks using evolutionary multiobjective optimization: Case study line Braşov to Zărneşti in Romania." Proceedings of the IEEE World Congress on Computational Intelligence, IEEE WCCI 2018, 2018 Congress on Evolutionary Computation (IEEE CEC 2018), Rio de Janeiro, Brazil, 8-13 July 2018. DOI: 10.1109/CEC.2018.8477842
- [C63]** A. Núñez, J. Hendriks, J. Moraal, I. Ramirez, R. Dollevoet, and Z. Li, "Rail condition monitoring using axle box acceleration measurements: defect detection in the Netherlands and Romania." Proceedings of 2018 World Transport Convention (WTC 2018), Beijing, China, June 18-21, 2018.
- [C62]** W. Liu, Z. Liu, A. Núñez, L. Wang, K. Liu, Y. Lyu, and H. Wang, "Multiobjective performance evaluation of the detection of catenary support components using DCNNs." Proceedings of 15th IFAC Symposium on Control in Transportation Systems (CTS 2018), Savona, Italy, June 6-8, 2018. DOI: 10.1016/j.ifacol.2018.07.017
- [C61]** W. Xie, A. Núñez, R. Maas, and Z. Li, "Decision support tool based on multi-source data analysis for the tram wheel-rail interface." Proceedings of 15th IFAC Symposium on Control in Transportation Systems (CTS 2018), Savona, Italy, June 6-8, 2018. DOI: 10.1016/j.ifacol.2018.07.020
- [C60]** A. Núñez, T. Popa, L.E. Anghel, J. Hendriks, J. Moraal, L. Dorin-Buretea, J. Paragreen, B. Miron, D. Gheorghe, M. Campean, R. Dollevoet, and Z. Li, "Smart technology solutions for the NeTIRail-INFRA case study lines: Axle box acceleration and ultra-low cost smartphones." Proceedings of 7th Transport Research Arena (TRA 2018), Vienna, Austria, April 16-19, 2018. DOI: 10.5281/zenodo.1440978

- [C59]** V. Caquilpan, D. Sáez, R. Hernández, J. Llanos, T. Roje, and A. Núñez, "Load estimation based on self-organizing maps and Bayesian networks for microgrid design in rural zones." Proceedings of the 2017 Conference on Innovative Smart Grid Technologies Latin America (ISGT-LA 2017), Quito, Ecuador, September 20-22, 2017. DOI: 10.1109/ISGT-LA.2017.8126709
- [C58]** H. Wang, A. Núñez, Z. Liu, J. Chen, and R. Dollevoet, "Intelligent condition monitoring of railway catenary systems: A Bayesian Network approach." Proceedings of the 25th International Symposium on Dynamics of Vehicles on Roads and Tracks, Rockhampton, Queensland, Australia, August 14-18, 2017.
- [C57]** A. Jamshidi, S. Hajizadeh, M. Naeimi, A. Núñez, and Z. Li, "Influencing factors for condition-based maintenance in railway tracks using a knowledge-based approach." Proceedings of the First International Conference on Rail Transportation (ICRT2017), Chengdu, China, July 10-12, 2017.
- [C56]** R. Schalk, A. Núñez, A. Zoeteman, and R. Wolfert, "Data analytics for the study of RCF damages on the Dutch High-Speed Line." Proceedings of the First International Conference on Rail Transportation (ICRT2017), Chengdu, China, July 10-12, 2017.
- [C55]** R. Schalk, A. Zoeteman, A. Núñez, and R. Wolfert, "Application of a bottom-up approach for the analysis of rolling contact fatigue in the Dutch high-speed line." 14th International Conference & Exhibition Railway Engineering 2017, Edinburgh, Scotland, Jun. 21-22, 2017.
- [C54]** H. Wang, Z. Liu, A. Núñez, and R. Dollevoet, "Identification of the catenary structure wavelength using pantograph head acceleration measurements." Proceedings of the 2017 IEEE International Instrumentation and Measurement Technology Conference, I2MTC, Torino, Italy, May 22-25, 2017. DOI: 10.1109/I2MTC.2017.7969731
- [C53]** Z. Su, A. Núñez, S. Baldi, and B. De Schutter, "Model predictive control for rail condition-based maintenance: A multilevel approach." Proceedings of the 19th IEEE International Conference on Intelligent Transportation Systems, Rio de Janeiro, Brazil, November 1-4, 2016, pp. 354-359. DOI: 10.1109/ITSC.2016.7795579
- [C52]** A. Núñez, J. Hendriks, Z. Li, and R. Dollevoet, "Educación e investigación en Ingeniería Ferroviaria: tren de mediciones CTO, una sala de clases sobre rieles (in Spanish)." Proceedings of the Conference Encuentros 2016, Barcelona, Spain, October 26-28, 2016.
- [C51]** S. Faghih-Roohi, S. Hajizadeh, A. Núñez, R. Babuška, and B. De Schutter, "A deep learning approach for detection of rail defects." Proceedings of the IEEE World Congress on Computational Intelligence, IEEE WCCI 2016, 2016 International Joint Conference on Neural Networks (IJCNN), Vancouver, Canada, 25-29 July 2016, pp. 2584-2589. DOI: 10.1109/IJCNN.2016.7727522
- [C50]** R. Morales, D. Sáez, L.G. Marin, and A. Núñez, "Microgrid planning based on fuzzy interval prediction models of renewable resources." Proceedings of the IEEE World Congress on Computational Intelligence, IEEE WCCI 2016, 2016 IEEE International Conference on Fuzzy Systems FUZZ-IEEE, Vancouver, Canada, 25-29 July 2016, pp. 336-343. DOI: 10.1109/FUZZ-IEEE.2016.7737706
- [C49]** C.E. Cortés, R. Claveria, D. Sáez, F. Valencia, F. Milla, and A. Núñez, "A distributed predictive control strategy for a two-route public transport system with a transfer station." Proceedings of the 9th Triennial Symposium on Transportation Analysis, TRISTAN IX, Oranjestad, Aruba, 13-17 June 2016.
- [C48]** A. Jamshidi, S. Faghih-Roohi, A. Núñez, R. Babuška, B. De Schutter, R. Dollevoet and Z. Li, "Probabilistic defect-based risk assessment approach for rail failures in railway infrastructure." Proceedings of the 14th IFAC Symposium on Control in Transportation Systems, CTS 2016, Istanbul, Turkey, 18-20 May 2016. IFAC-PapersOnLine 49(3), pp. 73-77 DOI: 10.1016/j.ifacol.2016.07.013
- [C47]** S. Hajizadeh, A. Núñez, and D. Tax, "Semi-supervised rail defect detection from imbalanced image data." Proceedings of the 14th IFAC Symposium on Control in Transportation Systems, CTS 2016, Istanbul, Turkey, 18-20 May 2016. IFAC-PapersOnLine 49(3), pp. 78-83 DOI: 10.1016/j.ifacol.2016.07.014
- [C46]** A. Jamshidi, A. Núñez, M. Molodova, Z. Li and R. Dollevoet, "Key performance indicators using an interval-based fuzzy prediction modeling to treat squats in railway infrastructures." Proceedings of the Third International Conference on Railway Technology: Research, Development and Maintenance, RAILWAYS2016, Cagliari, Sardinia, Italy, 5-8 April 2016, Paper 159. DOI: 10.4203/ccp.110.159
- [C45]** F. Veltman, L. Marin, D. Sáez, L. Gutierrez and A. Núñez, "Prediction interval modeling tuned by an improved teaching-learning algorithm applied to load forecasting in microgrids." Proceedings of the IEEE Symposium Series on Computational Intelligence, IEEE SSCI 2015, Cape Town, South Africa, December 7-10, pp. 651-658, 2015. DOI: 10.1109/SSCI.2015.100
- [C44]** Z. Su, A. Núñez, A. Jamshidi, S. Baldi, Z. Li, R. Dollevoet, and B. De Schutter, "Model predictive control for maintenance operations planning of railway infrastructures." Proceedings of the 6th International Conference on Computational Logistics, Delft, The Netherlands, September 23-25, 2015. DOI: 10.1007/978-3-319-24264-4_46
- [C43]** F. Acquaviva, A. Núñez, D. Di Paola, A. Rizzo, and B. De Schutter, "Customer-oriented optimal vehicle assignment in mobility-on-demand systems." Proceedings of the 18th IEEE International Conference on Intelligent Transportation Systems, Canary Island, Spain, September 15-18, 2015. DOI: 10.1109/ITSC.2015.458
- [C42]** J. Hendriks, A. Núñez, and Z. Li, "Health condition monitoring based on ABA measurements for high-speed railway tracks." Proceedings of the 10th International Workshop on Structural Health Monitoring, Stanford CA, USA, September 1-3, 2015.
- [C41]** A. Jamshidi, A. Núñez, Z. Li, R. Dollevoet, "Fuzzy maintenance decision support for treating squats in railway infrastructures." Proceedings of the Joint Rail Conference 2015, JRC2015, San Jose CA, USA, 23-26 March 2015. DOI: 10.1115/JRC2015-5676
- [C40]** S. Li, A. Núñez, Z. Li, R. Dollevoet, "Automated detection of corrugation: Preliminary results in the Dutch network using axle box acceleration measurements." Proceedings of the Joint Rail Conference 2015, JRC2015, San Jose CA, USA, 23-26 March 2015. DOI: 10.1115/JRC2015-5730
- [C39]** A. Jamshidi, A. Núñez, Z. Li, and R. Dollevoet, "Maintenance decision indicators for treating squats in railway infrastructure." Proceedings of the 94th Annual Meeting of the Transportation Research Board, Washington D.C., USA, January 11-15, 2015.
- [C38]** A. Núñez, J. Hendriks, Z. Li, B. De Schutter, R. Dollevoet, "Facilitating maintenance decisions on the Dutch railways using Big Data: The ABA case study." Proceedings of the 2014 IEEE BigData Conference, Workshop on Large Data Analytics in Transportation and Railway Infrastructure, Washington DC, USA, October 27-30, pp. 48-53, 2014. DOI: 10.1109/BigData.2014.7004431

- [C37]** M. Molodova, M. Oregui, A. Núñez, Z. Li, J. Moraal, and R. Dollevoet, "Axle box acceleration for health monitoring of insulated joints: A case study in The Netherlands." Proceedings of the 17th International IEEE Annual Conference on Intelligent Transportation Systems, ITSC'14, Qingdao, China, 8-11 October, pp. 822-827, 2014. DOI: 10.1109/ITSC.2014.6957791
- [C36]** S. Liu, J.R.D. Frejo, A. Núñez, B. De Schutter, A. Sodowska, H. Hellendoorn, and F. Camacho, "Tractable robust predictive control approaches for freeway traffic networks." Proceedings of the 17th International IEEE Annual Conference on Intelligent Transportation Systems, ITSC'14, Qingdao, China, 8-11 October, pp. 1857-1862, 2014. DOI: 10.1109/ITSC.2014.6957963
- [C35]** A. Núñez, M. Oregui, and M. Molodova, "An expensive optimization-based computational intelligence method for railway track parameter identification." Proceedings of the Twelfth International Conference on Computational Structures Technology, CST2014, Naples, Italy, 2-5 September, Paper 173, 2014. DOI: 10.4203/ccp.106.173
- [C34]** M. Molodova, M. Oregui, A. Núñez, Z. Li, and R. Dollevoet, "Automated monitoring system for insulated joints: preliminary results using axle box acceleration measurements." Proceedings of the Second International Conference on Railway Technology: Research, Development and Maintenance, RAILWAYS2014, Ajaccio, Corsica, France, 8-11 April 2014, Paper 85. DOI: 10.4203/ccp.104.85
- [C33]** Z. Li, M. Molodova, A. Núñez, and R. Dollevoet, "A novel on-train measurement system for early detection of squats and other track defects." Proceedings of the 10th World Congress on Railway Research, WCRR2013, Sydney, Australia, 25-28 November 2013.
- [C32]** M. Molodova, Z. Li, A. Núñez, and R. Dollevoet, "Monitoring the railway infrastructure: Detection of surface defects using wavelets." Proceedings of the 16th International IEEE Annual Conference on Intelligent Transportation Systems, ITSC'13, The Hague, The Netherlands, 6-9 October, pp. 1316-1321, 2013. DOI: 10.1109/ITSC.2013.6728413
- [C31]** A. Núñez, C. Ocampo-Martinez, B. De Schutter, F. Valencia, J. Lopez, and J.J. Espinosa, "A multiobjective-based switching topology for hierarchical model predictive control applied to a hydro-power valley." Proceedings of the 3rd IFAC International Conference on Intelligent Control and Automation Science, Chengdu, China, 2-4 September, pp. 534-539, 2013. DOI: 10.3182/20130902-3-CN-3020.00042
- [C30]** Z. Li, M. Molodova, A. Núñez, and R. Dollevoet, "A new methodology for monitoring high-frequency wheel-rail interaction." Proceedings of the International Symposium on Dynamics of Vehicle on Roads and Tracks, IAVSD2013, Qingdao, China, 19-23 August 2013.
- [C29]** J.R.D. Frejo, A. Núñez, B. De Schutter, and E.F. Camacho, "Model predictive control for freeway traffic using discrete variable speed limit signals." Proceedings of the European Control Conference 2013, ECC'2013, Zurich, Switzerland, July 17-19, pp. 4033-4038, 2013.
- [C28]** F. Ávila, D. Sáez, G. Jiménez-Estévez, Lorenzo Reyes and A. Núñez, "Fuzzy demand forecasting in a predictive control strategy for a renewable-energy based microgrid." Proceedings of the European Control Conference 2013, ECC'2013, Zurich, Switzerland, July 17-19, pp. 2020-2025, 2013.
- [C27]** C.R. Portilla, L.G. Cortes, F. Valencia, J.D. López, J.J. Espinosa, A. Núñez, and B. De Schutter, "Decentralized model predictive control for an urban traffic network." Eighth Triennial Symposium on Transportation Analysis, TRISTAN VIII, San Pedro, Chile, June 9-14, 2013.
- [C26]** A. Núñez, B. De Schutter, C.R. Portilla, F. Valencia, and J.J. Espinosa, "Including bicycling in a multimodal urban street intersection: a model-based predictive control approach." Eighth Triennial Symposium on Transportation Analysis, TRISTAN VIII, San Pedro, Chile, June 9-14, 2013.
- [C25]** A. Núñez, and B. De Schutter, "Distributed fuzzy confidence interval for traffic measurements." Proceedings of the 51st IEEE Conference on Decision and Control, CDC'12, Maui, Hawaii, USA, December 10-13, pp. 6995-7000, 2012. DOI: 10.1109/CDC.2012.6426336
- [C24]** C. Ponce, D. Sáez, and A. Núñez, "Modelación Difusa de Takagi & Sugeno para el Control de una Planta Solar de Colectores Solares Distribuidos (Spanish)," In Proc. of the XX Congress of the Chilean Association of Automatic Control, ACCA, Santiago, Chile, November 12-16, 2012.
- [C23]** G. Bustos, L.S. Vargas, F. Milla, D. Sáez, H. Zareipour, and A. Núñez, "Comparison of fixed speed wind turbines models: A case study." Proceedings of the IECON 2012, 38th Annual Conference of the IEEE Industrial Electronics Society, Montreal, Canada, October 25-28, pp. 961-966, 2012. DOI: 10.1109/IECON.2012.6388937
- [C22]** Z. Hidayat, A. Núñez, R. Babuška, and B. De Schutter, "Identification of distributed parameter systems with missing data." Proceedings of the 2012 IEEE Multi-Conference on Systems and Control, Dubrovnik, Croatia, October 3-5, pp. 1014-1019, 2012. DOI: 10.1109/CCA.2012.6402648
- [C21]** C. Portilla, F. Valencia, J.D. López, J. Espinosa, A. Núñez, and B. De Schutter, "Non-linear model predictive control based on game theory for traffic control in highways." Proceedings of the 4th IFAC Nonlinear Model Predictive Control Conference, NH Conference Center Leeuwenhorst, Noordwijkerhout, The Netherlands, August 23-27, pp. 436-441, 2012. DOI: 10.3182/20120823-5-NL-3013.00046.
- [C20]** M. Rinaldi, L. Capisani, A. Ferrara, A. Núñez, and B. De Schutter, "Distributed identification of the Cell Transmission traffic model: A case study." Proceedings of the American Control Conference 2012, ACC'2012, Montreal, Canada, June 27-29, pp. 6545-6550, 2012. DOI: 10.1109/ACC.2012.6315461
- [C19]** J. Llanos, D. Sáez, R. Palma-Behnke, A. Núñez, and G. Jimenez-Estevéz, "Load profile generator and load forecasting for a renewable-based microgrid using self-organizing maps and neural networks." IEEE World Congress on Computational Intelligence, IEEE IJCNN 2011, Brisbane, Australia, June 10-15, pp. 1-8, 2012. DOI: 10.1109/IJCNN.2012.6252648
- [C18]** Z. Hidayat, R. Babuška B. De Schutter, and A. Núñez, "Observers for linear distributed parameter systems: A survey." ROSE'2011 – International Symposium on Robotic and Sensors Environments, Montreal, Canada, September 17-18, pp. 166-171, 2011. DOI: 10.1109/ROSE.2011.6058523

- [C17]** Z. Hidayat, R. Babuška B. De Schutter, and A. Núñez, "Decentralized Kalman filter comparison for distributed-parameter systems: A case study for a 1D heat conduction process." ETFA'2011 – IEEE International Conference on Emerging Technology & Factory Automation, Toulouse, France, September 5-9, pp. 1-8, 2011. DOI: 10.1109/ETFA.2011.6059054
- [C16]** A. Núñez, D. Sáez, I. Škrjanc, and B. De Schutter, "A new method for hybrid-fuzzy identification." 18th IFAC World Congress, Milan, Italy, August 28 to September 2, pp. 15013-15018, 2011. DOI: 10.3182/20110828-6-IT-1002.02523
- [C15]** A. Núñez, D. Sáez, C.E. Cortés, M. Gendreau, and B. De Schutter, "Multiobjective model predictive control applied to a dial-a-ride system." Proceedings of the 90th Annual Meeting of the Transportation Research Board, Washington D.C., USA, January 23-27, 2011.
- [C14]** A. Núñez, B. De Schutter, D. Sáez, C.E. Cortés, "Hierarchical multiobjective model predictive control applied to a dynamic pick-up and delivery problem." 13th International IEEE Annual Conference on Intelligent Transportation Systems, Madeira Island, Portugal, September 19-22, pp. 1553-1558, 2010. DOI: 10.1109/ITSC.2010.5625193.
- [C13]** D. Muñoz-Carpintero, A. Núñez, D. Sáez, and C.E. Cortés, "Evolutionary algorithms and fuzzy clustering for control of a dynamic vehicle routing problem oriented to user policy." IEEE World Congress on Computational Intelligence, IEEE CEC 2010, Barcelona, Spain, July 18-23, pp. 1-8, 2010. DOI: 10.1109/CEC.2010.5586534
- [C12]** C.E. Cortés, D. Sáez, A. Núñez, and G. Otárola, "Control Inteligente para optimización en tiempo real de sistemas de transporte (in Spanish)." IX Congreso Internacional de Estudiantes y Profesionales de Ingeniería Civil: Avances y desafíos de la movilidad y del transporte (ANEIC 2009), Bucaramanga, Colombia, April 22-25, 2009.
- [C11]** G. Karer, I. Škrjanc, B. Zupančič, J. Causa, A. Núñez, and D. Sáez, "Comparison of branch and bound and genetic algorithm based approaches to hybrid fuzzy predictive control." 15th Zittau East-West Fuzzy Colloquium, Zittau, Germany, September 17-19, 2008.
- [C10]** J. Causa, G. Karer, A. Núñez, D. Sáez, I. Škrjanc, and B. Zupančič, "Hybrid fuzzy predictive control of a batch reactor using branch and bound and a genetic algorithm approach." 17th IFAC World Congress, Seoul, Korea, July 6-11, pp. 8381-8386, 2008. DOI: 10.3182/20080706-5-KR-1001.01417
- [C09]** A. Núñez, D. Sáez, and C.E. Cortés, "Hybrid predictive control for the vehicle dynamic routing problem based on evolutionary multiobjective optimization (EMO)." 17th IFAC World Congress, Seoul, Korea, July 6-11, pp. 13085-13090, 2008. DOI: 10.3182/20080706-5-KR-1001.02212
- [C08]** C.E. Cortés, D. Sáez, F. Milla, M. Riquelme, and A. Núñez, "Hybrid predictive control for real-time optimization of public transport system' operations based on evolutionary multiobjective optimization." 10th International Conference on Application of Advanced Technologies in Transportation, Athens, Greece, May 27-31, 2008.
- [C07]** A. Núñez, M. Riquelme, D. Sáez and C. Cortés, "Control predictivo híbrido para el problema de ruteo dinámico de vehículos basado en optimización Multiobjetivo evolucionaria (EMO) (Spanish)." XIII Congreso Chileno de Ingeniería de Transporte, Santiago, Chile, October 22-26, 2007.
- [C06]** D. Sáez, I. Škrjanc, A. Núñez and S. Oblak, "Multiobjective predictive control based on fuzzy hybrid modelling." Eurosim 2007, Ljubljana, Slovenia, September 9-13, 2007.
- [C05]** D. Sáez, C. E. Cortés, E. Sáez, M. Riquelme, A. Núñez and A. Tirachini, "Hybrid predictive control strategy for a public transport system with uncertain demand." TRISTAN VI Congress, Phuket Island, Thailand, June 10-15, 2007.
- [C04]** A. Núñez, D. Sáez, S. Oblak and I. Škrjanc, "Hybrid predictive control based on fuzzy model." IEEE World Congress on Computational Intelligence, FUZZ IEEE 2006, Vancouver, BC, Canada, July 16-21, pp. 1947-1953, 2006. DOI: 10.1109/FUZZY.2006.1681970
- [C03]** A. Núñez, D. Sáez and C. E. Cortés, "Problema de ruteo dinámico de una flota de vehículos con un enfoque de control predictivo híbrido basado en algoritmos genéticos (Spanish)," Actas del XII Congreso Chileno de Ingeniería de Transporte, Valparaíso, Chile, October 17-21, pp. 361-373, 2005.
- [C02]** C. E. Cortés, D. Sáez, F. Murcia and A. Núñez, "Control predictivo híbrido para un sistema personalizado de transporte público puerta a puerta programado en tiempo real (Spanish)", Actas del XII Congreso Chileno de Ingeniería de Transporte, Valparaíso, Chile, October 17-21, pp. 375-388, 2005.
- [C01]** D. Sáez, A. Núñez, A. Chong, R. Zúñiga and V. Albornoz, "Control híbrido predictivo aplicado al control de temperatura de un estanque (Spanish)", In Proc. of the XVI Congress of the Chilean Association of Automatic Control, ACCA, Santiago, Chile, November 2-4, pp. 61-67, 2004.

Other publications

- [O03]** R. Dollevoet, A. Núñez, and Z. Li, "ABA measurements: Monitoring of condition-based maintenance during revenue operations." European Railway Review, Volume 23, Issue 3, 2017, Pages: 32-35.
- [O02]** J. Causa, G. Karer, A. Núñez, D. Sáez, I. Škrjanc, and B. Zupančič, "Control predictivo híbrido difuso basado en algoritmos genéticos y su aplicación al control de temperatura de un reactor batch (in Spanish)." *Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros de Chile*, Volume 120, Issue 3, December 2008, Pages: 113-123.
- [O01]** A. Núñez, D. Sáez, and C.E. Cortés, "Aplicación de técnicas de inteligencia computacional en un problema de ruteo dinámico de vehículos (in Spanish)," *Revista Chilena de Ingeniería. Anales del Instituto de Ingenieros*, Volume 119, Issue 1, April 2007, Pages: 21-31.

Abstracts / Other presentations

- [A29]** A. Núñez, Z. Li, R. Dollevoet, J. Moraal, J. Hendriks, W. Phusakulkajorn, A. Zoeteman, and M. Asplund, "Axle box acceleration measurements for railway condition monitoring." Webinar of the EU Project In2Track3, September 22, 2023, Hybrid-Sweden.
- [A28]** A. Núñez, "Elements of Intelligent Railway Infrastructure." CEE Guest Speaker Seminar Series, March 10, 2023, University of Maryland, College Park, USA.

- [A27]** W. Phusakulkajorn, J. Hendriks, J. Moraal, A. Núñez, and Z. Li, "A digital twin architecture for a dynamic catalog of rail surface defects." *Cyber Resilience and Quantum Computing in Railway Engineering and Operations*, March 7-8, 2023, College Park, Maryland, USA.
- [A26]** A. Núñez, "Intelligent Railway Infrastructure: asset management and sensing." Guess lecture University of Seville, February 8, 2023, Seville, Spain.
- [A25]** A. Núñez, "Intelligent Railway Infrastructure: maintenance." Guess lecture University of Seville, February 7, 2023, Seville, Spain.
- [A24]** A. Núñez, "Intelligent Railway Infrastructures: Current development and future trend." Guess speaker at the Special Symposium on Mega Trends in Future Mobility, MSAT, August 30-31, 2022, Thailand.
- [A23]** A. Núñez, "Elements of Intelligent Railway Infrastructures." Guess speaker at the First International Young Scholars Forum on Intelligent Transportation Infrastructure, June 23, 2022, Hybrid-China.
- [A22]** A. Núñez, "Elements of Intelligent Asset Management for Railway Infrastructures." Guess speaker at the Data Science and Analytics technical meeting, April 14, 2022, The Transportation Technology Center Inc – Association of American Railroads, TTCI, Hybrid-USA.
- [A21]** A. Núñez, "Elements of Intelligent Railway Infrastructures." Guess speaker at the ENUCOMPI & SINFO 2021 symposium, November 23-25, 2021, Federal University of Piauí, Picos, Brazil.
- [A20]** A. Núñez, "Intelligent monitoring of infrastructures." Guess speaker at Workshop 5 Smart Pavement – vehicle monitoring, tools and technics for functional pavement, at the International Symposium on Frontiers of Road and Airport Engineering 2021 (IFRAE-Delft2021), July 11-14, 2021, Delft, The Netherlands.
- [A19]** A. Núñez, "Multiobjective optimization for rail maintenance in a regional railway network." Invited lecture at the Big Data in Railroad Maintenance 2020, Delaware, USA, December 16, 2020.
- [A18]** A. Núñez, "Rail maintenance support in a regional railway network." Workshop Computational Intelligence for Control and Process Monitoring and Applications, Department of Electrical Engineering, University of Chile, Santiago, Chile, December 12, 2019.
- [A17]** A. Núñez, "Automatic detection of rail surface defects using video image: A case study in the Dutch railways." Presentation at the Lecture Series of the Monitoring Community, Department of Engineering Structures, Delft, The Netherlands, May 10, 2019.
- [A16]** A. Núñez, "Big Data in railway infrastructure." Plenary at the KIVI International Board event about Big Data, Eindhoven, The Netherlands, June 28, 2018.
- [A15]** A. Núñez, "Rail maintenance operations in regional railways – case study line Brasov to Zarnesti in Romania." Poster presentation at the 2nd Conference IN.NL 2018, Network of Chilean researchers in The Netherlands, Wageningen, The Netherlands, February 16, 2018.
- [A14]** A. Núñez, "Big data: some examples and challenges in railway systems." Colloquium at the Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hong Kong, July 18, 2017.
- [A13]** A. Núñez, "Big data in railway engineering: examples and challenges." Colloquium at the School of Electrical Engineering, Southwest Jiaotong University, Chengdu, China, July 14, 2017.
- [A12]** A. Núñez, "Rail condition monitoring in The Netherlands: A Big Data problem." ISCI Seminar, University of Chile, Santiago, Chile, March 31, 2017.
- [A11]** A. Núñez, "Big data in railway maintenance planning." Presentation at the meeting InnoRail, Rail Center, Amersfoort, The Netherlands, March 16, 2017.
- [A10]** A. Núñez, "Section of railway engineering and case study on rail defects." Presentation at the 1st Meeting IN.NL, Network of Chilean researchers in The Netherlands, Delft, The Netherlands, February 10, 2017.
- [A09]** A. Núñez, "Automatic detection of rail surface defects using vibration and video image: A case study in the Dutch railways." Presentation at the Conference Big Data in Railroad Maintenance Planning 2016, University of Delaware, USA, December 15-16, 2016.
- [A08]** Z. Cong, A. Núñez, B. De Schutter, and R. Babuška, "Computational intelligence methods for traffic: traffic monitoring using distributed interval fuzzy models and ant colony for dynamic traffic routing." Workshop on Large-Scale Complex Control Systems, 1st International Conference on Systems and Computer Science, Villeneuve d'Ascq, France, August 29-31, 2012.
- [A07]** A. Núñez, C.E. Cortés, D. Sáez, and M. Gendreau, "Multiobjective predictive control applied to a dial-a-ride system." Transportation and Logistics Workshop, Reñaca, Chile, December 8-11, 2009.
- [A06]** D. Sáez, C. Cortes, A. Núñez, M. Riquelme, F. Milla, and G. Otarola, "Hybrid predictive control for real-time optimization of public transport systems' operations." Bus Rapid Transit International Workshop, Santiago, Chile, August 26-29, 2008.
- [A05]** C.E. Cortés, D. Sáez, A. Núñez, and M. Gendreau, "Hybrid predictive control for the dynamic pick-up and delivery problem with variable fleet size based on an evolutionary multiobjective optimization approach (EMO)." International Federation of Operational Research Societies Conference, IFORS 2008, Sandton, South Africa, July 13-18, 2008.
- [A04]** C.E. Cortés, A. Núñez, M. Riquelme, and D. Sáez "Hybrid predictive control for the dynamic vehicle routing problem based on evolutionary multiobjective optimization (EMO)." International Congress INFORMS Annual Meeting 2007, Seattle USA, November 4-7, 2007.
- [A03]** C.E. Cortés, D. Sáez, A. Núñez, E. Sáez, M. Riquelme, F. Milla, A. Pillajo, and A. Tirachini, "Estrategias de control predictivo para transporte público." Workshop ICHIO, Santiago, Chile, 2-3 May, 2007.
- [A02]** C.E. Cortés, D. Sáez, A. Núñez, E. Sáez, and A. Tirachini, "Estrategias en tiempo real para optimizar operaciones de transporte público y despacho de vehículos: un enfoque de control automático (in Spanish)." V Congreso ITS, Santiago, Chile, November 23-24, 2006.
- [A01]** A. Núñez, C.E. Cortés, and D. Sáez, "Hybrid adaptive predictive control for the multi-vehicle dynamic pick-up and delivery problem including a fuzzy clustering approach." Double Workshop on Transport and Sustainable Cities, Santiago, Chile, August 7-11, 2006.

Project reports

- [P19]** "Validated monitoring equipment produced by testing of instrumentation in the real environment," Deliverable D4.11, Collaborative Project H2020-MG-2015-2015 GA-636237 Needs Tailored Interoperable Railway – NeTIRail-INFRA, 97 pp., Apr. 2018. Task leader: AFER. Contributions from partners: AFER, ADS, TUDelft, RCCF, IFSTARR, SZ.
- [P18]** "Tailoring track to avoid corrugations: Traffic dependant selection of rail cross-section, clips, and pads to avoid or delay corrugation," Deliverable D2.6, Collaborative Project H2020-MG-2015-2015 GA-636237 Needs Tailored Interoperable Railway – NeTIRail-INFRA, 75 pp., May 2018. Task leader: TUDelft. Contributions from partners: TUDelft, USFD, SZ, AFER, INTADER, TCDD.
- [P17]** "Track and ride quality monitoring technology based on train-borne measurements in standard vehicles," Deliverable D4.4, Collaborative Project H2020-MG-2015-2015 GA-636237 Needs Tailored Interoperable Railway – NeTIRail-INFRA, 31 pp., Nov. 2017. Task leader: TUDelft. Contributions from partners: TUDelft, AFER, IFSTARR, SZ, RCCF, INTADER, TCDD.
- [P16]** "Corrugation reduction strategies for NeTIRail-INFRA track types, with estimates of costs and benefits," Deliverable D2.5, Collaborative Project H2020-MG-2015-2015 GA-636237 Needs Tailored Interoperable Railway – NeTIRail-INFRA, 89 pp., Feb. 2017. Task leader: TUDelft. Contributions from partners: TUDelft, USFD, SZ, AFER, INTADER, TCDD.
- [P15]** "Development of technology for track and ride quality monitoring," Deliverable D4.3, Collaborative Project H2020-MG-2015-2015 GA-636237 Needs Tailored Interoperable Railway – NeTIRail-INFRA, 39 pp., Oct. 2016. Task leader: TUDelft. Contributions from partners: TUDelft, AFER, IFSTARR, SZ, RCCF, INTADER, TCDD.
- [P14]** J. Hendriks, A. Núñez, J. Moraal, Z. Li, "Aspotversnellingsmetingen op het noordelijk deel van de HSL-Zuid," Section of Railway Engineering, Delft University of Technology, 61 pp., Sep. 2014. In Dutch. First report delivered to Infrasppeed on the application of ABA measurement system to High Speed Line in The Netherlands. Confidential.
- [P13]** A. Núñez, B. De Schutter, M.D. Doan, T. Keviczky, J. Schiffer, A. Anta, T.D. Trung, J. Raisch, S. Zampieri, S. Bolognani, S. Rivero, M. Farina, G. Ferrari-Trecate, M. Franceschelli, A. Pisano, A. Giua, E. Usai, H. Nijmeijer, S. Adinandra, "Report on efficient coordination schemes based on dedicated distributed optimization tools for consensus and coordination of localized controllers with applications in energy systems," Deliverable D3.2.2, European FP7 NoE HYCON2, 51pp., Aug. 2012.
- [P12]** A. Núñez, B. De Schutter, C. Ocampo-Martinez, M. Serra, C. de Prada, D. Sarabia, G. Gutierrez, E. Gomez Sayalero, G. Hug-Glanzmann, R. Negenborn, G. Andersson, H. Hellendoorn, P. Patrinos, D. Bernardini, A. Bemporad, P. Mc Namara, G. Lightbody, C. Bordons, A. del Real, E. Camacho, "Report on methods for constructing appropriate temporal and spatial divisions of the overall system with application to hydrogen networks and power systems," Deliverable D3.1.3, European FP7 NoE HYCON2, 73pp., Aug. 2012.
- [P11]** A. Núñez, B. De Schutter, A. Fuchs, S. Mariethoz, M. Morari, C. Fischer, L. Puglia, D. Bernardini, A. Bemporad, J. Dai, G. Damm, A. Bladh, K.H. Johansson, M. Kördel, H. Sandberg, K. Cheong Sou, J. Wu, F. Shaik, J.M.A. Scherpen, A.J. van der Schaft, D. Zonetti, and R. Ortega. "Modeling and analysis issues in energy and sustainability: Modeling and analysis issues in energy and sustainability." Deliverable D1.4.4, European FP7 NoE HYCON2, 56 pp., Aug. 2012.
- [P10]** C. Canudas-de-Wit, D. Pisarski, L. Leon, A. Kibangou, N. Groot, M. Hajiahmadi, B. De Schutter, H. Hellendoorn, Z. Cong, A. Núñez, R. Babuska, M. Rinaldi, L. Capisani, A. Ferrara, G. Como, B. Piccoli, E. Cristiani, A. Tosin, "Modeling and analysis methods in transportation systems," Deliverable D1.3.1, European European FP7 NoE HYCON2, 48 pp., Aug. 2012.
- [P09]** H. Scheu, A. Núñez, B. De Schutter, D. Sáez, C.E. Cortés, M.D. Doan, T. Keviczky, F. Valencia and J. Espinosa, "Reports on the evaluation results, including economic potential and suggestions for real-life applications," Deliverable D3.1.4, European FP7 STREP project HD-MPC, 75 pp., Aug. 2011.
- [P08]** H. Scheu, M.D. Doan, A. Núñez, F. Valencia, A. Ferramosca, J.M. Maestre, D. Limón, I. Alvarado, D. Muñoz de la Peña, T. Alamo and E.F. Camacho, "Software tool with different methods and variants for different problem classes," Deliverable D3.1.4 - Software, European FP7 STREP project HD-MPC, 14 pp., Jun. 2010. Confidential.
- [P07]** Núñez, T.L.M. Santos, D.Limón, J.E. Normey-Rico, T. Alamo, J. Espinosa, F. Valencia, A. Marquez, J. Lopez, J. García, Y. Li, and B. De Schutter, "Report on implementation of timing and delay related approaches to simple case studies," Deliverable D3.4.2, European FP7 STREP project HD-MPC, 55 pp., Dec. 2010.
- [P06]** A. Núñez, B. Picasso, D. De Vito, R. Scattolini, P. Colaneri, J. Espinosa, F. Valencia, B. De Schutter, and K. Stankova, "Report on newly developed coordination mechanisms for hierarchical and distributed MPC," Deliverable D3.3.2, European FP7 STREP project HD-MPC, 49 pp., Aug. 2010.
- [P05]** I. Alvarado, D. Muñoz, D. Limon, M.A. Ridaó, J. Espinosa, J. García, F. Valencia, Z. Hidayat, B. De Schutter, R. Babuška, and A. Núñez, "Report on implementation for selected benchmarks," Deliverable D6.4.1, European FP7 STREP project HD-MPC, 75 pp., Mar. 2010.
- [P04]** D. Limon, J. Espinosa, F. Valencia, J. García, I.J. Wolf, W. Marquardt, and A. Núñez, "Report of literature survey and analysis regarding timing and delay issues," Deliverable D3.4.1, European FP7 STREP project HD-MPC, 41 pp., Mar. 2010.
- [P03]** R. Manasevich, D. Muñoz-Carpintero, and A. Núñez, "Modeling and identification of burglary hotspots in Santiago using computational intelligence techniques," Technical report, Millennium Institute "Complex Engineering Systems," and Center for Analysis and Modeling of Security (CEAMOS), Universidad de Chile, 25 pp., Jan. 2010. In Spanish. We used real data of crimes from the uniformed Chilean national police force and gendarmerie. Confidential.
- [P02]** J. Causa, and A. Núñez, "Design and implementation of a fuzzy logic-based controller for the calcination process of animal bones for aluminum protective mold coatings," Tech. rep., SUINCO S.A., Santiago, Chile, 26 pp., Jun. 2007. In Spanish. We used real data of the process, online measures, and implementation as a support tool for the operators. Confidential.
- [P01]** R. Manasevich, and A. Núñez, "Stress trajectories analysis for a circular cavity in elastic media, a study for the rock-bursting phenomenon." Technical report, National Copper Corporation of Chile CODELCO - "El Teniente" and Center for Mathematical Modeling (CMM) of Universidad de Chile, 28 pp., Apr. 2007. In Spanish, Confidential.