

CURRÍCULUM VITAE

Manuel Ruiz Arahal

Departamento: Ingeniería de Sistemas y Automática, Universidad de Sevilla

Situación profesional: Catedrático de Universidad, TC

Sexenios: 5 (2022)

Proyectos que dirige:

- Optimización holística de sistemas polifásicos mediante control predictivo adaptable (PID2021-125189OB-I00)
- Uso energéticamente eficiente y ecológico de baterías con degradación reducida (TED2021-129558B-C22)
- Gestión Óptima de la Demanda de Frío en Grandes Instalaciones (RTI2018-101897-B-I00)
- ECASYS: Sistema europeo de cambio de ancho (ferrocarriles) 2014

Premios internacionales:

- 2010. Best Paper Award for the IEEE Transactions on Industrial Electronics, concedido por The Industrial Electronics Society por “A proof of concept...”
- 2010. Best IET Electric Power Applications paper award por “Predictive-space vector PWM current...”
- 2009. IEEE Conference on Decision and Control, General Chairs’ Recognition Award for interactive papers por “Application of robustified model...”

Patentes:

Fernando Ruiz del Olmo, Javier Davila Martin, Manuel R. Arahal:

Baterías Submarinas de Par Ajustado, Solicitud:2009-02-09 00:00:00, Nr.:P200900477

Revistas internacionales (selección):

Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Bermúdez Guzmán, Mario, Garrido Satué, Manuel: Predictive Stator Current Control of a Five-phase Motor using a Hybrid Control Set. En: IEEE Journal of Emerging and Selected Topics in Power Electronics. 2023. Vol. 11. Núm. 2. Pag. 1444-1453. 10.1109/Jestpe.2022.3172138

Ruiz Arahal, Manuel, Garrido Satué, Manuel, Barrero Garcia, Federico José, Martín Torres, Cristina: Online Adaptive Set of Virtual Voltage Vectors for Stator Current Regulation of a Six-Phase Induction Machine Using Finite State Model Predictive Controllers. En: Applied Sciences. 2023. Vol. 13. Núm. 7. Pag. 1-15. 10.3390/app13074113

Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Garrido Satué, Manuel, Bermúdez Guzmán, Mario: Fast Finite-State Predictive Current Control of Electric Drives. En: IEEE Access. 2023. Vol. 11. Pag. 12820-12827. 10.1109/Access.2023.3240573

Soto Marchena, David, Barrero Garcia, Federico José, Colodro Ruiz, Francisco, Ruiz Arahal, Manuel, Mora Jimenez, Jose Luis: On-Site Calibration of an Electric Drive: A Case Study Using a Multiphase System. En: Sensors. 2023. Vol. en prensa. Pag. 1-15. 10.3390/s23177317

Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Garrido Satué, Manuel, Martín Torres, Cristina, Bermúdez Guzmán, Mario: Evolutionary Gaps Stator Current Control of Multi-phase Drives Balancing Harmonic Content. En: IEEE Transactions on Industrial Electronics. 2023. Vol. en prensa

Garrido Satué, Manuel, Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Ramirez, D.R.: Control Predictivo Polifásico Mediante Dos Constelaciones de Vectores Virtuales de Tensión. En: Revista Iberoamericana de Automática e Informática Industrial. 2023. Vol. en prensa

Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Garrido Satué, Manuel, Ramirez, D.R.: Predictive Control of Multi-phase Motor for Constant Torque Applications. En: Machines: Machinery and Automation. 2022. Vol. 10. Núm. 3. Pag. 1-13. <https://doi.org/10.3390/machines10030211>

Garrido Satué, Manuel, Ruiz Arahal, Manuel, Ortega Linares, Manuel Gil, Rodríguez Ramírez, Daniel: A simple rotor current estimation method for predictive control of multi-phase drives. En: International Journal of Circuit Theory and Applications. 2022. 10.1002/cta.3394

Garrido Satué, Manuel, Ruiz Arahal, Manuel, Ramirez, D.R.: Estimación de intensidades rotóricas en máquinas polifásicas para control predictivo. En: Revista Iberoamericana de Automática e Informática Industrial. 2022. 10.4995/riai.2022.17153

Garrido Satué, Manuel, Ruiz Arahal, Manuel, Acedo Bueno, Luis Fernando, Ortega Linares, Manuel Gil: Economic versus energetic model predictive control of a cold production plant with thermal energy storage. En: Applied Thermal Engineering. 2022. Vol. 210. 10.1016/j.applthermaleng.2022.118309

Ruiz Arahal, Manuel, Garrido Satué, Manuel, Ortega Linares, Manuel Gil: Optimal chiller loading including transients. En: Energy and Buildings. 2021. Vol. 253. 10.1016/j.enbuild.2021.111527

Bermúdez Guzmán, Mario, Ruiz Arahal, Manuel, Duran Martinez, Mario Javier, González Prieto, Ignacio: Model Predictive Control of Six-Phase Electric Drives Including ARX Disturbance Estimator. En: IEEE Transactions on Industrial Electronics. 2021. Vol. 68. Núm. 1. Pag. 81-91. 10.1109/Tie.2019.2962477

Ruiz Arahal, Manuel, Garrido Satué, Manuel, Barrero Garcia, Federico José, Ortega Linares, Manuel Gil: Adaptive Cost Function FCSMPC for 6-Phase IMs. En: Energies. 2021. Vol. 14. Núm. 17. Pag. 1-14. 10.3390/en14175222

Ruiz Arahal, Manuel, Ortega Linares, Manuel Gil, Garrido Satué, Manuel: Chiller Load Forecasting Using Hyper-Gaussian Nets. En: Energies. 2021. Vol. 14. Núm. 12. 10.3390/en14123479

Ruiz Arahal, Manuel, Martín Torres, Cristina, Barrero Garcia, Federico José, Duran Martinez, Mario Javier: Assessing Variable Sampling Time Controllers for Five-Phase Induction Motor Drives. En: IEEE Transactions on Industrial Electronics. 2020. Vol. 67. Núm. 4. Pag. 2523-2531. 10.1109/Tie.2019.2908585

Bermúdez Guzmán, Mario, Martín Torres, Cristina, González Prieto, Ignacio, Duran Martinez, Mario Javier, Ruiz Arahal, Manuel, et. al.: Predictive current control in electrical drives: an illustrated review with case examples using a five-phase induction motor drive with distributed windings. En: IET Electric Power Applications. 2020. Vol. 14. Núm. 8. Pag. 1291-1310. 10.1049/iet-epa.2019.0667

Ruiz Arahal, Manuel, Kowal Gornig, Agnieszka, Barrero Garcia, Federico José, Castilla Nieto, Maria del Mar: Cost Function Optimization for Multi-phase Induction Machines Predictive Control. En: Revista Iberoamericana de Automática e Informática Industrial. 2019. Vol. 16. Núm. 1. Pag. 48-55. 10.4995/riai.2018.9771

Ruiz Arahal, Manuel, Martín Torres, Cristina, Barrero Garcia, Federico José, González Prieto, Ignacio, Duran Martinez, Mario Javier: Model-Based Control for Power Converters with Variable Sampling Time: A Case Example Using Five-Phase Induction Motor Drives. En: IEEE Transactions on Industrial Electronics. 2019. Vol. 66. Núm. 8. Pag. 5800-5809. 10.1109/Tie.2018.2870390

Ruiz Arahal, Manuel, Martín Torres, Cristina, Kowal Gornig, Agnieszka, Castilla Nieto, Maria del Mar, Barrero Garcia, Federico José: Cost function optimization for predictive control of a five-phase IM drive. En: Optimal Control Applications & Methods. 2019. Vol. 2019. Pag. 1-10. 10.1002/oca.2499

Kowal, Agnieszka, Ruiz Arahal, Manuel, Martín Torres, Cristina, Barrero Garcia, Federico José: Constraint Satisfaction in Current Control of a Five-phase Drive with Locally Tuned Predictive Controllers. En: Energies. 2019. Vol. 12. Núm. 14. Pag. 1-9. Manuscript ID: energies-512660

Martín Torres, Cristina, Barrero Garcia, Federico José, Ruiz Arahal, Manuel, Duran Martinez, Mario Javier: Model-Based Predictive Current Controllers in Multiphase Drives Dealing with Natural Reduction of Harmonic Distortion. En: Energies. 2019. Vol. 12. Núm. 9. 10.3390/en12091679

Ramirez, D.R., Martín Torres, Cristina, Kowal Gornig, Agnieszka, Ruiz Arahal, Manuel: Min-Max Predictive Control of a Five-Phase Induction Machine. En: Energies. 2019. Vol. 12. Núm. 19. Pag. 3713-3721. 10.3390/en12193713

Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Duran Martinez, Mario Javier, Ortega Linares, Manuel Gil, Martín Torres, Cristina: Trade-offs analysis in predictive current control of multi-phase induction machines. En: Control Engineering Practice. 2018. Vol. 81. Pag. 105-113. 10.1016/j.conengprac.2018.09.012

Rodas Benítez, Jorge Esteban, Martín Torres, Cristina, Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Gregor Recalde, Raul Igmarr: Influence of Covariance-Based ALS Methods in the Performance of Predictive Controllers With Rotor Current Estimation. En: IEEE Transactions on Industrial Electronics. 2017. Vol. 64. Núm. 4. Pag. 2602-2607. 10.1109/Tie.2016.2636205

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Rodas Benítez, Jorge Esteban, Barrero Garcia, Federico José, Ruiz Arahal, Manuel, Martín Torres, Cristina, Gregor Recalde, Raul Igmarr: On-line Estimation of Rotor Variables in Predictive Current Controllers: A Case Study using Five-phase Induction Machines. En: IEEE Transactions on Industrial Electronics. 2016. Vol. 63. Núm. 9. Pag. 5348-5356. 10.1109/Tie.2016.2559420.

Martín Torres, Cristina, Ruiz Arahal, Manuel, Barrero Garcia, Federico José, Duran Martinez, Mario Javier: Multiphase Rotor Current Observers for Current Predictive Control: a Five-Phase Case Study. En: Control Engineering Practice. 2016. Vol. 49. Pag. 101-111