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## Employment

### Engineering School

Universidad Andrés Bello  
4 Mar 2019 → present

## Research outputs

### Predictive Control for Current Distortion Mitigation in Mining Power Grids

Gómez, J. S., Navas-Fonseca, A., Flores-Bahamonde, F., Tarisciotti, L., Garcia, C., Nuñez, F., Rodriguez, J. & Cipriano, A. Z., Mar 2023, In: Applied Sciences (Switzerland). 13, 6, 3523.

### A Two-Step Continuous-Control-Set MPC for Modular Multilevel Converters Operating with Variable Output Voltage and Frequency

Arias-Esquivel, Y., Cardenas, R., Tarisciotti, L., Diaz, M. & Mora, A., 2023, (Accepted/In press) In: IEEE Transactions on Power Electronics. p. 1-12 12 p.

### Extended Kalman Filter as the Prediction Model in Sensorless Predictive Control of Induction Motor

Davari, S. A., Azadi, S., Tarisciotti, L., Garcia, C., Zhang, Z., Wang, F. & Rodriguez, J., 2023, *2023 IEEE International Conference on Predictive Control of Electrical Drives and Power Electronics, PRECEDE 2023*. Institute of Electrical and Electronics Engineers Inc., (2023 IEEE International Conference on Predictive Control of Electrical Drives and Power Electronics, PRECEDE 2023).

### Finite Control Set Model Predictive Control for a Wheatstone Bridge Active Magnetic Bearing

Tarisciotti, L., Ahumada, C., Papini, L., Gonzalez, C. & Bolognesi, P., 2023, (Accepted/In press) In: IEEE Transactions on Industry Applications. p. 1-13 13 p.

### Latest Advances of Model Predictive Control in Electrical Drives. Part I: Basic Concepts and Advanced Strategies

Rodriguez, J., Garcia, C., Mora, A., Flores-Bahamonde, F., Acuna, P., Novak, M., Zhang, Y., Tarisciotti, L., Davari, A., Zhang, Z., Wang, F., Norambuena, M., Dragicevic, T., Blaabjerg, F., Geyer, T., Kennel, R., Arab Khaburi, D., Abdelrahem, M., Zhang, Z., Mijatovic, N., & 1 othersAguilera, R. P., Apr 2022, In: IEEE Transactions on Power Electronics. 37, 4, p. 3927-3942 16 p.

### Distributed Predictive Secondary Control for Imbalance Sharing in AC Microgrids

Navas-Fonseca, A., Burgos-Mellado, C., Gomez, J. S., Donoso, F., Tarisciotti, L., Saez, D., Cardenas, R. & Sumner, M., 1 Jan 2022, In: IEEE Transactions on Smart Grid. 13, 1, p. 20-37 18 p.

### An ANN-Assisted Control for the Power Decoupling of a Multiple Active Bridge DC-DC Converter

Buticchi, G., Farjudian, A., Oh, J. & Tarisciotti, L., 2022, *IECON 2022 - 48th Annual Conference of the IEEE Industrial Electronics Society*. IEEE Computer Society, (IECON Proceedings (Industrial Electronics Conference); vol. 2022-October).

### Application of a Single-Phase Matrix Converter for Electric Vehicle Charging

Vidal, C., Tarisciotti, L., Diaz, M., Cardenas, R., Rodriguez, J. & Wheeler, P., 2022, *2022 IEEE Biennial Congress of Argentina, ARGENCON 2022*. Institute of Electrical and Electronics Engineers Inc., (2022 IEEE Biennial Congress of Argentina, ARGENCON 2022).

#### **Circulating Current Suppression In DAB Assisted Low-Voltage Variable Frequency MMC**

Aguilar, R., Tarisciotti, L. & Pereda, J., 2022, (Accepted/In press) In: IEEE Transactions on Industry Applications. 58, 5, p. 1-9 9 p.

#### **Continuous Control Set Model Predictive Control of a Modular Multilevel Converter for Drive Applications**

Arias-Esquivel, Y., Cardenas, R., Urrutia, M., Diaz, M., Tarisciotti, L. & Clare, J. C., 2022, (Accepted/In press) In: IEEE Transactions on Industrial Electronics. p. 1-11 11 p.

#### **Evaluation of Position Controllers for a Wheatstone Bridge Active Magnetic Bearing system**

Tarisciotti, L., Papini, L., Ahumada, C., Castaño, C. G. & Bolognesi, P., 2022, *2022 IEEE Energy Conversion Congress and Exposition, ECCE 2022*. Institute of Electrical and Electronics Engineers Inc., (2022 IEEE Energy Conversion Congress and Exposition, ECCE 2022).

#### **Model Predictive Control for the Reduction of Marine Propellers Vibrations**

Ahumada, C., Tarisciotti, L., Sepúlveda, D. & Sáez, D., 2022, *2022 IEEE Energy Conversion Congress and Exposition, ECCE 2022*. Institute of Electrical and Electronics Engineers Inc., (2022 IEEE Energy Conversion Congress and Exposition, ECCE 2022).

#### **4-MW Class High-Power-Density Generator for Future Hybrid-Electric Aircraft**

Golovanov, D., Gerada, D., Sala, G., Degano, M., Trentin, A., Connor, P. H., Xu, Z., Rocca, A. L., Galassini, A., Tarisciotti, L., Eastwick, C. N., Pickering, S. J., Wheeler, P., Clare, J., Filipenko, M. & Gerada, C., 1 Dec 2021, In: IEEE Transactions on Transportation Electrification. 7, 4, p. 2952-2964 13 p.

#### **Current and Voltage Model Predictive Control for a Three-Stage Smart Transformer**

Buticchi, G., Tarisciotti, L., Wheeler, P., Shao, S. & Chen, L., 20 Jun 2021, *Proceedings of 2021 IEEE 30th International Symposium on Industrial Electronics, ISIE 2021*. Institute of Electrical and Electronics Engineers Inc., (IEEE International Symposium on Industrial Electronics; vol. 2021-June).

#### **A novel predictive control method with optimal switching sequence and filter resonance suppression for two-stage matrix converter**

Di, Z., Xu, D., Tarisciotti, L. & Wheeler, P., 2 Jun 2021, In: Energies. 14, 12, 3652.

#### **A decoupled control strategy for a shunt-series modular multilevel converter in wind energy conversion system applications**

Pizarro, P., Diaz, M., Rojas, F., Espinoza, M., Tarisciotti, L. & Gomis-Bellmunt, O., 22 Mar 2021, *2021 IEEE International Conference on Automation/24th Congress of the Chilean Association of Automatic Control, ICA-ACCA 2021*. Institute of Electrical and Electronics Engineers Inc., 9465265. (2021 IEEE International Conference on Automation/24th Congress of the Chilean Association of Automatic Control, ICA-ACCA 2021).

#### **Circulating Current Control in Arm Link Enhanced Modular Multilevel Converter for Low Voltage and Variable Frequency Applications**

Aguilar, R., Tarisciotti, L. & Pereda, J., 2021, *2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings*. Institute of Electrical and Electronics Engineers Inc., p. 2645-2652 8 p. (2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings).

#### **Finite Control Set Model Predictive Control for Dual Active Bridge converter**

Tarisciotti, L., Chen, L., Shao, S., Dragicevic, T., Wheeler, P. & Zanchetta, P., 2021, (Accepted/In press) In: IEEE Transactions on Industry Applications.

#### **Latest Advances of Model Predictive Control in Electrical Drives. Part II: Applications and Benchmarking with Classical Control Methods**

Rodriguez, J., Garcia, C., Mora, A., Davari, A., Rodas, J., Valencia Garcia, D. F., Elmorshedy, M. F., Wang, F., Zuo, K., Tarisciotti, L., Flores-Bahamonde, F., Xu, W., Zhang, Z., Zhang, Y., Norambuena, M., Emadi, A., Geyer, T., Kennel, R., Dragicevic, T., Arab Khaburi, D., & 3 others Zhang, Z., Abdelrahem, M. & Mijatovic, N., 2021, (Accepted/In press) In: IEEE Transactions on Power Electronics. 37, 5, p. 5047-5061 15 p.

#### **Predictive Control for An Active Magnetic Bearing System with Sensorless Position Control**

Tarisciotti, L., Papini, L., Ahumada, C. & Bolognesi, P., 2021, *2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings*. Institute of Electrical and Electronics Engineers Inc., p. 3267-3274 8 p. (2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings).

#### **Unified Cost Function Model Predictive Control for a three-stage Smart Transformer**

Tarisciotti, L., Buticchi, G., De Carne, G., Yang, J., Gu, C. & Wheeler, P., 2021, *2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings*. Institute of Electrical and Electronics Engineers Inc., p. 3468-3475 8 p. (2021 IEEE Energy Conversion Congress and Exposition, ECCE 2021 - Proceedings).

#### **Single Integration for Multi-objective Control**

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#### **Large signal stability analysis of DAB converter using Moving Discretized Control Set- Model Predictive Control**

Tarisciotti, L., Chen, L., Shuai, S. & Dragicevic, T., 11 Oct 2020, *ECCE 2020 - IEEE Energy Conversion Congress and Exposition*. Institute of Electrical and Electronics Engineers Inc., p. 5922-5929 8 p. 9236234. (ECCE 2020 - IEEE Energy Conversion Congress and Exposition).

#### **Predictive zero-sequence control of parallel three-phase active rectifiers**

Tarisciotti, L., Burgos, C., Garcia, C. & Rodriguez, J., 11 Oct 2020, *ECCE 2020 - IEEE Energy Conversion Congress and Exposition*. Institute of Electrical and Electronics Engineers Inc., p. 2584-2591 8 p. 9236146. (ECCE 2020 - IEEE Energy Conversion Congress and Exposition).

#### **Predictive Control Based DC Microgrid Stabilization with the Dual Active Bridge Converter**

Chen, L., Gao, F., Shen, K., Wang, Z., Tarisciotti, L., Wheeler, P. & Dragicevic, T., Oct 2020, In: *IEEE Transactions on Industrial Electronics*. 67, 10, p. 8944-8956 13 p., 8960628.

#### **Modular Multilevel Converter Based Topology for High-Speed, Low-Voltage Electric Drives**

Tarisciotti, L., Costabeber, A., Tardelli, F. & Cardenas, R., 1 Sept 2020, In: *IEEE Transactions on Industry Applications*. 56, 5, p. 5202-5211 10 p., 9130917.

#### **Carrier-Based Modulated Model Predictive Control for Vienna Rectifiers**

Xu, J., Gao, F., Soeiro, T. B., Chen, L., Tarisciotti, L., Tang, H. & Bauer, P., Sept 2020, *2020 22nd European Conference on Power Electronics and Applications, EPE 2020 ECCE Europe*. Institute of Electrical and Electronics Engineers Inc., 9215826. (2020 22nd European Conference on Power Electronics and Applications, EPE 2020 ECCE Europe).

#### **Model Predictive Control for the Reduction of DC-link Current Ripple in Two-level Three-phase Voltage Source Inverters**

Xu, J., Gao, F., Soeiro, T. B., Chen, L., Tarisciotti, L., Tang, H. & Bauer, P., Sept 2020, *2020 22nd European Conference on Power Electronics and Applications, EPE 2020 ECCE Europe*. Institute of Electrical and Electronics Engineers Inc., 9215838. (2020 22nd European Conference on Power Electronics and Applications, EPE 2020 ECCE Europe).

#### **Finite control set model predictive control of parallel three-phase active rectifiers**

Tarisciotti, L., Burgos, C., Garcia, C. & Rodriguez, J., Feb 2020, *Proceedings - 2020 IEEE International Conference on Industrial Technology, ICIT 2020*. Institute of Electrical and Electronics Engineers Inc., p. 1071-1076 6 p. 9067141. (Proceedings of the IEEE International Conference on Industrial Technology; vol. 2020-February).

#### **Improved modular multilevel converter topology for low voltage variable speed drives**

Tarisciotti, L., Costabeber, A., Diaz, M. & Cardenas, R., Feb 2020, *Proceedings - 2020 IEEE International Conference on Industrial Technology, ICIT 2020*. Institute of Electrical and Electronics Engineers Inc., p. 837-842 6 p. 9067144. (Proceedings of the IEEE International Conference on Industrial Technology; vol. 2020-February).

#### **Model Predictive Control for Dual-Active-Bridge Converters Supplying Pulsed Power Loads in Naval DC Micro-Grids**

Chen, L., Shao, S., Xiao, Q., Tarisciotti, L., Wheeler, P. W. & Dragičević, T., Feb 2020, In: *IEEE Transactions on Power Electronics*. 35, 2, p. 1957-1966 10 p., 8717683.

### **Moving discretised control set - Model predictive control for dual-active-bridge**

Tarisciotti, L., Linglin, C., Wheeler, P. & Zanchetta, P., Feb 2020, *Proceedings - 2020 IEEE International Conference on Industrial Technology, ICIT 2020*. Institute of Electrical and Electronics Engineers Inc., p. 1094-1099 6 p. 9067129. (Proceedings of the IEEE International Conference on Industrial Technology; vol. 2020-February).

### **An Overview of Microgrids Challenges in the Mining Industry**

Gomez, J. S., Rodriguez, J., Garcia, C., Tarisciotti, L., Flores-Bahamonde, F., Pereda, J., Nunez, F., Cipriano, A. Z. & Salas, J. C., 2020, In: *IEEE Access*. 8, p. 191378-191393 16 p., 9229426.

### **Research and Realisation of High-Power Medium Voltage Active Rectifier Concepts for Future Hybrid-Electric Aircraft Generation**

Trentin, A., Sala, G., Tarisciotti, L., Galassini, A., Degano, M., Connor, P., Golovanov, D., Gerada, D., Xu, Z., La Rocca, A., Eastwick, C., Pickering, S., Wheeler, P., Clare, J. C. & Gerada, C., 2020, (Accepted/In press) In: *IEEE Transactions on Industrial Electronics*. 68, 12, p. 11684-11695 12 p., 9280429.

### **Advanced modulations for a current-fed isolated DC-DC converter with wide voltage operating ranges**

Chen, L., Tarisciotti, L., Costabeber, A., Gao, F., Wheeler, P. & Zanchetta, P., Dec 2019, In: *IEEE Journal of Emerging and Selected Topics in Power Electronics*. 7, 4, p. 2540-2552 13 p., 8466874.

### **Phase-Shift Modulation for a Current-Fed Isolated DC-DC Converter in More Electric Aircrafts**

Chen, L., Tarisciotti, L., Costabeber, A., Guan, Q., Wheeler, P. & Zanchetta, P., 1 Sept 2019, In: *IEEE Transactions on Power Electronics*. 34, 9, p. 8528-8543 16 p., 8590782.

### **A multilevel chain-link topology for low voltage, variable frequency applications**

Tarisciotti, L., Costabeber, A., Tardelli, F. & Cardenas, R., Sept 2019, *2019 IEEE Energy Conversion Congress and Exposition, ECCE 2019*. Institute of Electrical and Electronics Engineers Inc., p. 5914-5921 8 p. 8912755. (2019 IEEE Energy Conversion Congress and Exposition, ECCE 2019).

### **Current-Fed Isolated DC/DC Converter for Future Aerospace Microgrids**

Tarisciotti, L., Costabeber, A., Chen, L., Walker, A. & Galea, M., 1 May 2019, In: *IEEE Transactions on Industry Applications*. 55, 3, p. 2823-2832 10 p., 8590688.

### **Model Predictive Control for Isolated DC/DC Power Converters with Transformer Peak Current Shaving**

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### **Predictive control strategies operating at fixed switching frequency for input filter resonance mitigation in an indirect matrix converter**

Rivera, M., Toledo, S., Tarisciotti, L., Wheeler, P. W. & Dan, H., 1 Sept 2018, In: *IEEE Latin America Transactions*. 16, 9, p. 2370-2376 7 p., 8789557.

### **Advanced modulation for the Active-Bridge-Active-Clamp (ABAC) converter**

Chen, L., Tarisciotti, L., Costabeber, A., Zanchetta, P. & Wheeler, P., 6 Apr 2018, *Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017*. Institute of Electrical and Electronics Engineers Inc., p. 1-6 6 p. (Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017; vol. 2018-January).

### **Indirect model predictive control with imposed sinusoidal source currents for a Direct Matrix Converter Working at fixed switching frequency**

Rivera, M., Tarisciotti, L. & Wheeler, P., 6 Apr 2018, *Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017*. Institute of Electrical and Electronics Engineers Inc., p. 1-6 6 p. (Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017; vol. 2018-January).

#### **Parameters mismatch analysis for the Active-Bridge-Active-Clamp (ABAC) converter**

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#### **Predictive control strategies operating at fixed switching frequency for input filter resonance mitigation in an indirect matrix converter**

Rivera, M., Amirbande, M., Vahedi, A., Tarisciotti, L. & Wheeler, P., 6 Apr 2018, *Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017*. Institute of Electrical and Electronics Engineers Inc., p. 1-6 6 p. (Proceedings - 2017 IEEE Southern Power Electronics Conference, SPEC 2017; vol. 2018-January).

#### **Fixed frequency model predictive control with active damping for an indirect matrix converter**

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#### **Indirect model predictive control strategy with active damping implementation for a direct matrix converter operating at fixed switching frequency**

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#### **Predictive control strategies for an indirect matrix converter operating at fixed switching frequency**

Rivera, M., Nasir, U., Tarisciotti, L., Wheeler, P., Dragicevic, T. & Blaabjerg, F., 19 Dec 2017, *2017 CHILEAN Conference on Electrical, Electronics Engineering, Information and Communication Technologies, CHILECON 2017 - Proceedings*. Institute of Electrical and Electronics Engineers Inc., p. 1-6 6 p. (2017 CHILEAN Conference on Electrical, Electronics Engineering, Information and Communication Technologies, CHILECON 2017 - Proceedings; vol. 2017-January).

#### **Indirect predictive control strategy with fixed switching frequency for a direct matrix converter**

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#### **Modulated model predictive current control of an indirect matrix converter with active damping**

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#### **Indirect model predictive control strategies with input filter resonance mitigation for a matrix converter operating at fixed switching frequency**

Rivera, M., Nikolic, A., Tarisciotti, L. & Wheeler, P., 8 Dec 2017, *19th International Symposium on Power Electronics, Ee 2017*. Institute of Electrical and Electronics Engineers Inc., p. 1-6 6 p. (19th International Symposium on Power Electronics, Ee 2017; vol. 2017-December).

#### **Indirect model predictive current control techniques for a direct matrix converter**

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#### **Permanent-Magnet Machine-Based Starter-Generator System with Modulated Model Predictive Control**

Yeoh, S. S., Yang, T., Tarisciotti, L., Hill, C. I., Bozhko, S. & Zanchetta, P., 1 Dec 2017, In: *IEEE Transactions on Transportation Electrification*. 3, 4, p. 878-890 13 p., 7990264.

#### **Evaluation of isolated DC/DC converter topology for future HVDC aerospace microgrids**

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**Modulated model predictive control for active split DC-bus 4-leg power supply**

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**Indirect predictive control techniques for a matrix converter operating at fixed switching frequency**

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**Modulated Predictive Control for Indirect Matrix Converter**

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**Control of a Direct Matrix Converter With Modulated Model-Predictive Control**

Vijayagopal, M., Zanchetta, P., Empringham, L., De Lillo, L., Tarisciotti, L. & Wheeler, P., 1 May 2017, In: *IEEE Transactions on Industry Applications*. 53, 3, p. 2342-2349 8 p., 7862752.

**More electric aircraft starter-generator system with utilization of hybrid modulated model predictive control**

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**Model Predictive Control for Shunt Active Filters with Fixed Switching Frequency**

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**Active Magnetic Bearing system design featuring a predictive current control**

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**Reactive power control strategies for UNIFLEX-PM Converter**

Pipolo, S., Bifaretti, S., Bonaiuto, V., Tarisciotti, L. & Zanchetta, P., 21 Dec 2016, *Proceedings of the IECON 2016 - 42nd Annual Conference of the Industrial Electronics Society*. IEEE Computer Society, p. 3570-3575 6 p. 7793903. (IECON Proceedings (Industrial Electronics Conference)).

**Analysis of conducted emissions from an electric nacelle anti-ice power control system**

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**A distributed model predictive control strategy for back-to-back converters**

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**Conducted emission evaluation for direct matrix converters**

Nothofer, A., Tarisciotti, L., Greedy, S., Empringham, L., De Lillo, L. & Degano, M., 5 Jul 2016, *Proceedings of 2016 ESA Workshop on Aerospace EMC, Aerospace EMC 2016*. Ouwehand, L. (ed.). Institute of Electrical and Electronics Engineers Inc., 7504552. (Proceedings of 2016 ESA Workshop on Aerospace EMC, Aerospace EMC 2016).

**Current control and reactive power minimization of a direct matrix converter induction motor drive with Modulated Model Predictive Control**

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**Predictive control of an indirect matrix converter operating at fixed switching frequency and unbalanced AC-supply**

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**Fixed frequency finite-state model predictive control for indirect matrix converters with optimal switching pattern**

Lei, J., Tarisciotti, L., Trentin, A., Zanchetta, P., Wheeler, P. & Formentini, A., 1 Jan 2016, *ECCE 2016 - IEEE Energy Conversion Congress and Exposition, Proceedings*. Institute of Electrical and Electronics Engineers Inc., 7855118. (ECCE 2016 - IEEE Energy Conversion Congress and Exposition, Proceedings).

**Predictive control for active split DC-bus 4-leg inverters**

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**Grid Parameter Estimation Using Model Predictive Direct Power Control**

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**Control of a direct matrix converter induction motor drive with modulated model predictive control**

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**Finite states modulated model predictive control for active power filtering systems**

Rabbeni, R., Tarisciotti, L., Gaeta, A., Formentini, A., Zanchetta, P., Pucci, M., Degano, M. & Rivera, M., 27 Oct 2015, *2015 IEEE Energy Conversion Congress and Exposition, ECCE 2015*. Institute of Electrical and Electronics Engineers Inc., p. 1556-1562 7 p. 7309879. (2015 IEEE Energy Conversion Congress and Exposition, ECCE 2015).

**Modulated model predictive current control for direct matrix converter with fixed switching frequency**

Vijayagopal, M., Zanchetta, P., Empringham, L., De Lillo, L., Tarisciotti, L. & Wheeler, P., 27 Oct 2015, *2015 17th European Conference on Power Electronics and Applications, EPE-ECCE Europe 2015*. Institute of Electrical and Electronics Engineers Inc., 7309347. (2015 17th European Conference on Power Electronics and Applications, EPE-ECCE Europe 2015).

**Online predictive model fitting algorithm for supply inductance estimation**

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