

Call for Papers

Special Section on Model Predictive Control of Motor Drives

For decades, field oriented control (FOC) has become a de facto industry standard for high performance control of ac motor drives. However, both the industry and academic communities are still striving to find more advanced control techniques to achieve better steady state performance, quicker dynamic response and simpler structure. For this aim, direct torque control (DTC), and more recently, model predictive control (MPC), have attracted increasing attention in the area of ac motor drives. Owing to its simple concept, fast transient response and flexibility in incorporating various constraints, MPC is regarded as a powerful and attractive alternative to conventional FOC and DTC. However, MPC has not yet reached a mature stage for industrial applications. Many aspects, e.g., reduction of computational burden, sensorless control, robustness against parameter mismatches, etc. need to be further investigated.

This Special Section aims to provide a forum for professionals from both academic and industrial communities to exchange their experience and latest achievements in the field of predictive control of motor drives. Topics of interest include, but are not limited to:

- Finite/continuous control set-model predictive control of motor drives (e.g., current, voltage, torque, flux or speed predictive control)
- Predictive control applied to power converters for motor drive supply control (e.g., back-to-back converters, matrix converters, multi-level converters)
- Multi-vector predictive control of motor drives
- Speed/position sensorless predictive control of variable-speed motor drives
- Predictive control schemes for post-fault operation of motor drives
- Predictive control with field-weakening and/or overmodulation
- Robust predictive control methods
- Model-free predictive control methods
- Long-horizon predictive control schemes
- Predictive control with modulated switching patterns
- Other related topics

Contact the deputy editor-in-chief if your manuscript is not within the listed topics, as papers within the general topic of electrical machines and systems are all welcome by the CES TEMS.

Brief guideline for authors:

Papers styles:

1. Review articles.
2. Original research.
3. Rapid communications.

All manuscripts must be submitted through Manuscript Central at <https://mc03.manuscriptcentral.com/tems>. Submissions must be clearly marked “**SS: Model Predictive Control of Motor Drives**” on the cover page. When uploading your paper, please select your manuscript type “Special Issue.” Refer to <http://www.cestems.org> for general information about electronic submission through Manuscript Central. Manuscripts submitted for the special issue will be reviewed separately and will be handled by the guest editorial board noted below.

About the journal

The CES TEMS is a brand-new quarterly journal published by the China Electrotechnical Society (CES) and the Institute of Electrical Engineering of the Chinese Academy of Sciences, with co-sponsorship of IEEE PELS, starting from March 2017.

Topics of the CES TEMS include but are not limited to electrical machine topologies and designs, field analysis, motor drives, motion control and servo systems, power electronics and power converters, EMI and EMC techniques, renewable energies, xEV and other electrified transportation techniques, applications of new materials, and many others related to the electrical machines and systems.

The CES TEMS is an open-access journal, currently with no publication charge applied to the authors. Published papers will be included in the IEEE Xplore. Inclusion in other globally recognized data base such as the Web of Science (SCI) is under arrangement.

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