



Software library for control of drives and actuators in
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Software library for control of drives and actuators in mechatronic applications

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Abstract

The result is a modular software library implementing advanced control algorithms for electric drives and actuators in mechatronic applications, with emphasis on robustness, scalability, and real-time usability. The library integrates validated vector-control structures for induction and synchronous machines, including control of parallel-connected induction motors supplied from a single inverter using an average-motor concept, optimal control of synchronous machines (e.g. IPMSM) based on MTPA/MTPV strategies, and field-oriented control of multiphase permanent-magnet synchronous machines employing extended Clarke and Park transformations and vector space decomposition.

Keywords

Control Algorithm, n-Phase Induction Machine, Vector control, 1st harmonic, 3rd harmonic, Multiphase machines, Park transform, Clarke transform, Permanent magnet synchronous motor