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used; 1.16. Bibliography; Chapter 2. Self-controlled Synchronous Motor: Dynamic Model Including the Behavior of Damper Windings and Commutation Overlap; 2.1. Introduction
2.2. Choice of the expression of Nk 2.3. Expression of fluxes; 2.4. General properties of coefficients , and ; 2.5. Electrical dynamic equations; 2.6. Expression of electromechanical variables; 2.7. Expression of torque; 2.8. Writing of equations in terms of co-energy; 2.9. Application to control; 2.10. Conclusion; 2.11. Appendix 1: value of coefficients , and ; 2.12. Appendix 2: derivatives of coefficients , and ; 2.13. Appendix 3: simplifications for small ; 2.14. Appendix 4: List of the main symbols used in Chapters 1 and 2; 2.15. Bibliography
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3.5. Optimal supplies of permanent magnet synchronous machines in the presence of faults 3.5.1. Introduction: the problem of a-b-c controls; 3.6. Supplies of faulty synchronous machines with non-sinusoidal back electromagnetic force; 3.6.1. Generalization of the modeling; 3.6.2. A heuristic approach to the solution; 3.6.3. First optimization of ohmic losses without constraint on the homopolar current; 3.6.4. Second optimization of ohmic losses with the sum of currents of non-faulty phases being zero; 3.6.5. Third optimization of ohmic losses with a homopolar current of zero (in all phases)
3.6.6. Global formulations

Sommario/riassunto

Classical synchronous motors are the most effective device to drive industrial production systems and robots with precision and rapidity. However, numerous applications require efficient controls in non-conventional situations.Firstly, this is the case with synchronous motors supplied by thyristor line-commutated inverters, or with synchronous motors with faults on one or several phases.Secondly, many drive systems use non-conventional motors such as polyphase (more than three phases) synchronous motors, synchronous motors with double excitation, permanent magnet linear synchron