



Electromechanical Multi-machine System for Railway: Modelling, Analysis and Control

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The authors develop an electrochemical multi-machine system for railway traction application. The train bogie system constituted of two induction motors (IM), fed by one voltage source inverter (VSI) is studied. It is piloted by a Mean Rotor Field Oriented Control (MRFOC). This system has a depending operation amplified by strong electric, magnetic and mechanical couplings. This study is focused on the mechanical coupling between a common load of the both motors carried out by two mechanical transmissions and two rail-wheel contacts. So, this bogie system is a high order non-linear one. Different simulations are presented and discussed in balanced and unbalanced system operation conditions.

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