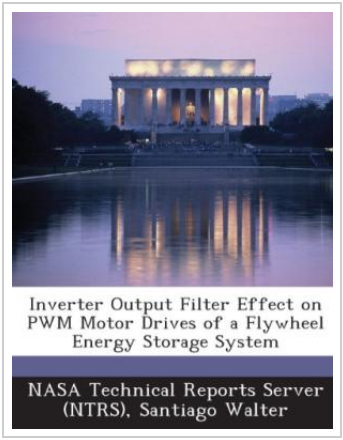

Inverter Output Filter Effect on Pwm Motor Drives of a Flywheel Energy Storage System

By Santiago Walter

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.NASA Glenn Research Center (GRC) has been involved in the research and development of high speed flywheel systems for small satellite energy storage and attitude control applications. One research and development area has been the minimization of the switching noise produced by the pulsed width modulated (PWM) inverter that drives the flywheel permanent magnet motor/generator (PM M/G). This noise can interfere with the flywheel M/G hardware and the system avionics hampering the full speed performance of the flywheel system. One way to attenuate the inverter switching noise is by placing an AC filter at the three phase output terminals of the inverter with the filter neutral point connected to the DC link (DC bus) midpoint capacitors. The main benefit of using an AC filter in this fashion is the significant reduction of the inverter s high dv/dt switching and its harmonics components. Additionally, common mode (CM) and differential mode (DM) voltages caused by the inverter s high dv/dt switching are also reduced. Several topologies of AC filters have been implemented and compared. One AC filter topology consists of...

Reviews

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