Two-Step Finite-Control Set Model Predictive Control for Three Phase UPS Inverters Feeding Non-linear Loads

Naser Mohammed Bayoumy AbdelRahim ,Y. Elthokaby

Abstract

A two-step prediction horizon finite-control set model predictive control scheme is proposed for three phase UPS inverters. Within the control scheme, a constraint is implemented to limit the maximum inverter inrush current, in case of non-linear loads, to an acceptable value. Simulation results show that the proposed control scheme has been successful in limiting the inrush current and producing a load voltage with very low THD with small filter size.

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