

MODEL PREDICTIVE CONTROL OF ACTIVE POWER AND REACTIVE POWER CONTROL IN THREE PHASE GRID CONNECTED INVERTER

P. Siva Krishna¹ & K.S.S Prasad Raju²

¹Research Scholar, S.R.K.R. Engineering College, Bhimavaram, Andhra Pradesh, India

²Assistant Professor, Department of EEE, S.R.K.R. Engineering College, Bhimavaram, Andhra Pradesh, India

ABSTRACT

The concept of this paper is to control the active power and reactive power for three-phase grid-connected inverters. Here, we have proposed that the control strategy of Model Predictive Control (MPC) be used instead of pi controllers. Comparing with traditional current control methods, a linear model of the load is needed to adjust the pi controllers. In the case of MPC, it will calculate predictions for each voltage vector, a discrete model of the load that does not need to be linear. The performance of the pi controllers depends on the k_p , k_i values, and their adjustments. There are no parameters to adjust in MPC, but the cost function must be defined. And the proposed method MPC has a better dynamic performance, and it will give transient dynamics recovery time and overshoot will have been considerably improved. Conclusively, the simulation results are allowed to confirm the efficiency of the proposal.

KEYWORDS: *Model Predictive Control*

Article History

Received: 14 Oct 2020 | Revised: 19 Oct 2020 | Accepted: 16 Nov 2020
