Digital Controller for Buck Converter

Radu ETZ, Ştefan DĂRĂBAN, Ionuț CIOCAN and Dorin PETREUŞ

Abstract

This paper presents an approach of digital control with average current mode control. The model takes into account the non idealities of the components, the discrete time modeling of the Z transform, sampling, delays in the control loop and the quantization of coefficients for the control loop. First the analog compensation is made and then based on the poles and zeros, the bilinear function in Matlab is used to find the coefficients. The model is simulated in PSIM with step load current.