

Further remarks on stability crossing curves of distributed delay systems

Constantin Irinel Morărescu and Silviu-Iulian Niculescu

October 23, 2007

Abstract

This chapter focuses on the problem of robust stability with delay deviation for a linear system with a distributed delay. First, we present some results regarding the stability analysis of a class of dynamical systems with distributed delay. Next, we describe a method to obtain the maximum radius of delay deviation without changing the number of right hand zeros of characteristic equation. The stability crossing curves, derived in our previous work, play a major role in our development. Some illustrative examples complete the work.

Keywords: Stability; distributed delay; gamma-distribution; crossing curves.