



NUMERICAL SIMULATION AND STATISTICAL MODELING OF HIGH INTENSITY RADIATED FIELDS OPEN LOOP EXPERIMENT DATA

Laura Smith

College of William & Mary, Department of Mathematics, 2001
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Advisor: Mark Hinders, Associate Professor of Applied Science

Abstract

Tests are conducted on a quad-redundant fault tolerant flight control computer to establish upset characteristics of an avionics system in an electromagnetic field. A numerical simulation and statistical model is described in this work to analyze the open loop experiment data collected in the reverberation chamber at NASA LaRC as a part of an effort to examine the effects of electromagnetic interference on fly-by-wire aircraft control system.

By comparing hundreds of simulation and model outputs, we first identify the models that best describe the data and then perform systematic statistical analysis on the data. We then combine all of these efforts which culminate in an extrapolation of values which are in turn used to support previous efforts used in evaluating the data.