An Object-Based Software Package for Interactive Control System Design and Analysis

Yong Zhu
Post Doctor
Bo Chen
Graduate Research Assistant
Harry H. Cheng
Professor, Member ASME

e-mail: hhcheng@ucdavis.edu
Integration Engineering Laboratory, Department of
Mechanical and Aeronautical Engineering, University of
California, Davis, CA 95616

Ch is an embeddable C/C11 interpreter. It was developed to allow software developers to use one language, anywhere and everywhere, for any programming task. Ch supports C99, a latest C standard ratified in 1999, and contains salient features for two and three dimensional plotting and numerical computing for applications in engineering and science. Developed in Ch, Ch Control System Toolkit provides a control class with member functions for object-based interactive modeling, analysis, and design of linear time-invariant control systems. The software package, available for downloading on the web, has been widely used in industry to solve practical engineering problems and in universities for instructional improvement. The design and implementation of Ch Control System Toolkit are described in this paper. Two application examples of control system design and analysis using Ch Control System Toolkit demonstrate its power and simplicity.