Application of Scilab in teaching of Engineering Numerical Computations

Liao Wenjiang, Dong Nanping, Sun Jianjing
College of Automation, Beijing Union University
No97, North Four Ring, District Chaoyang, Beijing, China 100101
Phone: +86-10-64900513, Fax: +86-10-64900505
Email: zdhtwenjiang@buu.edu.cn

Abstract

Numerical Calculation Lecture focusing on understanding the fundamental mathematical concepts and mastering problem-solving skills using numerical methods is an import lecture in colleges whose knowledges are hard to understand and master for most students. Scilab , famous open-source scientific computation software, can be used as a scripting language to test algorithms or to perform numerical computations. Scilab provides many numerical methods and is very easy to use, even for people without prior programming experience.

This article mainly discusses how to apply Scilab in the lecture of engineering numerical computations to make the learning easy and practical. Students should be able to solve similar engineering computations problems immediately after taking the class using the Scilab codes we provide in class. For most students and particularly non-math majors understanding how to use numerical tools correctly in solving their problems of interest is more important than studying lengthy proofs and derivations.

Key words: Scilab, engineering numerical computations, open-source