Tutorial Examples

The MatMOL Group (2009)

Introduction

Inside the `Benchmark_Examples` directory one can find, among others, the Matlab$^{©}$ .m-files for the examples used in (1). The examples to simulate the Burger's equation and a tubular reactor with three different phases.

These example codes are available free of charge and on an as is basis. The authors cannot be held liable for any deficiency, fault or inconvenience resulting from their use.

Contents

The tutorial examples have been included in four different folders. One folder with the `Dynamic Regridding` examples, a second folder with the `Finite Differences` examples, another one with the `Finite Elements` examples and one more containing the `Spectral` examples.

Installation

To be able to run the tutorial examples, the MatMOL toolbox has to be downloaded and installed (see http://www.matmol.org/). Also make sure that the main MatMOL directory and all subdirectories have been added to the Matlab$^{©}$ path. To add these directories to the path, open Matlab$^{©}$, go to `File > Set Path` in order to open the `Set Path` dialog box. Choose `Add with subfolders ...` and select the main MatMOL directory (i.e., the one to which you unzipped MatMOL toolbox). Choose `Save` if you want use these settings for a future session, or `Close` if you want to use the settings only for the current session and not for future sessions.

After this, download the zip file with the tutorial examples and unzip it in a directory. Try the configuration by running, for instance, `burgers_main.m`.

References

[1] A. Vande Wouwer, P. Saucez, and W.E. Schiesser 2004. Simulation of distributed parameter systems using a Matlab-based method of lines toolbox: Chemical engineering applications, *Industrial and Engineering Chemistry Research*, 43, 3469-3477.