Numpy / Matplotlib Introduction

universität wien
Faculty of Physics

The following Post-Processing tasks should be Python / Numpy / Matplotlib:

- **Read Data:**
  Read the Scalar Field Data `u.dat` from the provided files. The file contains an 50×50 array, where the first dimension corresponds with the time and the second dimension with the spatial coordinate. Time and Space data can be found in the files `t.dat` or `x.dat`, respectively.
- **2D Plot:**
  Plot a 2D Image of the provided data. Don't forget proper description of the axes and add some contour lines for better readability.
- **1D Plot:**
  Plot the Scalar Data for Time $t = 50$ and again make sure that all axes are described correctly.
- **Post Processing:**
  Calculate the mean value as well as the standard deviation of the provided data using numpy AND native python code. Check the results and compare timings.