

## IN-CLASS WORK: FIGURES FOR SCIENTIFIC PAPER & TALK

### 1. Figure-Requirements: Practice Example

I will walk you through a set of tools how to use xmgrace to fulfill the following list of requirements for figures for scientific papers and talks. I will show you the main tools using the following data (of the driven damped pendulum inclass work steps 8 and 9 and mini-projects II)

```
~kvollmay/share.dir/inclass.dir/out7th0omega19_A1.049.dat
~kvollmay/share.dir/inclass.dir/out9_bifurc_th0_om1.9.dat
```

(for this inclass work and more info about xmgrace see on our webpage the section: Guidelines for Main Project).

Copy either one of your main project results or the above data into your working directory. I will show you how to fulfill the following requirements.

#### Requirements for Figures:

- no title
- axes:
  - label axes (large enough, neat font-tools via clicks and via commands, location of axis label)
  - axis width thick enough
  - number of tick marks large enough
  - tick label size large enough
  - tick marks width and size large enough
  - choose wanted x-range and y-range (main features visible)
- legend (or equivalent with labels) large enough and each set should be labeled (or clear trend of which parameter was varied and in which range) and should not cover data
- label for major parameter large enough (in talk in figure, in paper if not in figure then in figure caption)
- symbols large enough and distinguishable and lines thick enough and distinguishable (keep in mind potential color blind person in audience) and in case of error bars thick enough error bars (labeled: see legend)
- in paper figure caption for each figure

### Further xmgrace-tools:

- extra cool fonts: italics, greek, boldface, superscript, shift
- position & size of figure (so that in paper no white frame)
- storing info in file.xmgr (highly recommended)
- printing eps-file (prepare and print; and epstopdf)
- pull in further data-set via block-data
- arrows and labels etc. (drawing objects)
- how to recycle figure via deleting data and replacing with new data or via change of xmgr-file
- symbols: filled and open symbols
- if time: insets
- (not xmgrace but useful: keep logfile for how you made data and where they are)

## 2. Your Figures

For the rest of the class work on the figures for the result section of your second paper. Please ask if you need any further tools, because I could show you several further xmgrace-tools. Also please ask in case you would like to discuss further ideas for your main project analysis.