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Classical and Quantum Nonlinear Dynamics
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Numerical exercises using Julia

The exercise sheets will contain a number of numerical problems, mostly solving equations of motion and plotting trajectories. While you are free to solve these problems using any numerical software you like, we will support the use of **Julia**, a new and powerful programming language.

It is free and can be downloaded (for Linux, Mac, Windows, ...) from the **Download page** of the Julia website.

Please install the newest version (v1.10) following the "help" instructions for your operating system on the Download page.

This will provide you with a basic Julia installation. There is a rich system of additional packages, and you will need some of them to work productively.

start Julia
press "]" to enter the package mode
type "add XXX" to add package XXX
e.g., type "add IJulia, Plots, LinearAlgebra" to get a minimal set of packages that we'll need.

press "Control+C" to leave the package mode.

To activate a package within a session, you have to type "using XXX".

After starting Julia, you can work either from the command line, or, more conveniently, from a Jupyter notebook. All the required ingredients come with the Julia installation.

type "using IJulia" followed by "notebook()"to start the Jupyter notebook.

There are tons of resources on the Julia website that you are welcome to explore to **learn more**.