

Hello Bmad School Students!

The goal of this school is to introduce you to Bmad and give you a hands-on experience using Tao which is program based upon the Bmad toolkit. The Bmad/Tao web site is at: <https://www.classe.cornell.edu/bmad/>

The course materials are at:

<https://www.classe.cornell.edu/bmad/manual.html>

Click on the "tutorial_bmad_tao.pdf" to get the course manual. Click on "Associated tutorial files" to get files you will need for running Tao.

There will be no lectures. The course format will be "reverse classroom" with students reading and doing exercises from the "Tutorial to Bmad and Tao" tutorial aided by the teachers with communication through Slack. This should ameliorate time zone issues. To join the Bmad Slack workspace, follow the link:

https://join.slack.com/t/bmad-simulation/shared_invite/zt-flwsmc3-ITpqJyhRKNwWkZSA6b4LUw

There will be one zoom meeting to give a quick introduction to Bmad and Tao. Do not worry if you cannot make the meeting. A video of the meeting will be made available along with the presentation slides. Additionally, everything of importance is covered in the course manual. The meeting will be at 9am PDT (UTC-7) / 12pm EDT (UTC-4). The zoom invite will be posted before the meeting on the School page

<https://indico.classe.cornell.edu/event/374/>

The first thing you will need to do for the class is to install Bmad and Tao on a computer of your choice. If your machine is running MacOS or Linux. You can install a "Bmad Distribution" (which includes Tao and a number of other programs). Instructions for this can be found on the Bmad web site (see above). Just click on the link "Distribution (Off-site) Setup" on the left.

For Windows, or if you are having problems with installing a Bmad Distribution on MacOS or Linux, a Docker virtual environment can be setup to run Tao within. Instructions for using Docker with Bmad/Tao is provided on the same "Distribution (Off-site) Setup" page. Note: Directions for the instillation of Docker on Windows is not yet complete and will hopefully be ready shortly.

It is highly recommended that you install Bmad/Tao sooner rather than later since if there are any hiccups, the process of sorting things out will be less rushed. That is, please try to install Bmad/Tao before Monday.

Please do not hesitate to communicate via Slack if you have any installation problems. This is the first time this school is being taught on-line so hiccups are to be expected...

Once you have Bmad/Tao installed, to test that you can run Tao with the command:
`tao -lat $ACC_ROOT_DIR/tao/examples/cesr/bmad_L9A18A000-_MOVEREC.lat`
This should give the attached plot window.

The course is self-paced. The following is a suggested schedule for the ten days (2 weeks x 5 days/week) of the course.

Day	Chapters	Topic
---	-----	-----
1	1-5	Starting Tao
2	6-8	Introduction to Tao
3	9-11	Intro to Tao Continued & Control Elements
4	12-13	Machine Coordinates & Phase Space
5	14-16	Superposition and Multipass
6	17-18	Forks, Branches and Tracking Methods
7	19	Optimization with Tao
8	20	Lattice Correction
9	21	Beam tracking
10		Student's choice: Wave analysis (chapter 22), Bmad/Tao Programming, or something the student is interested in.

