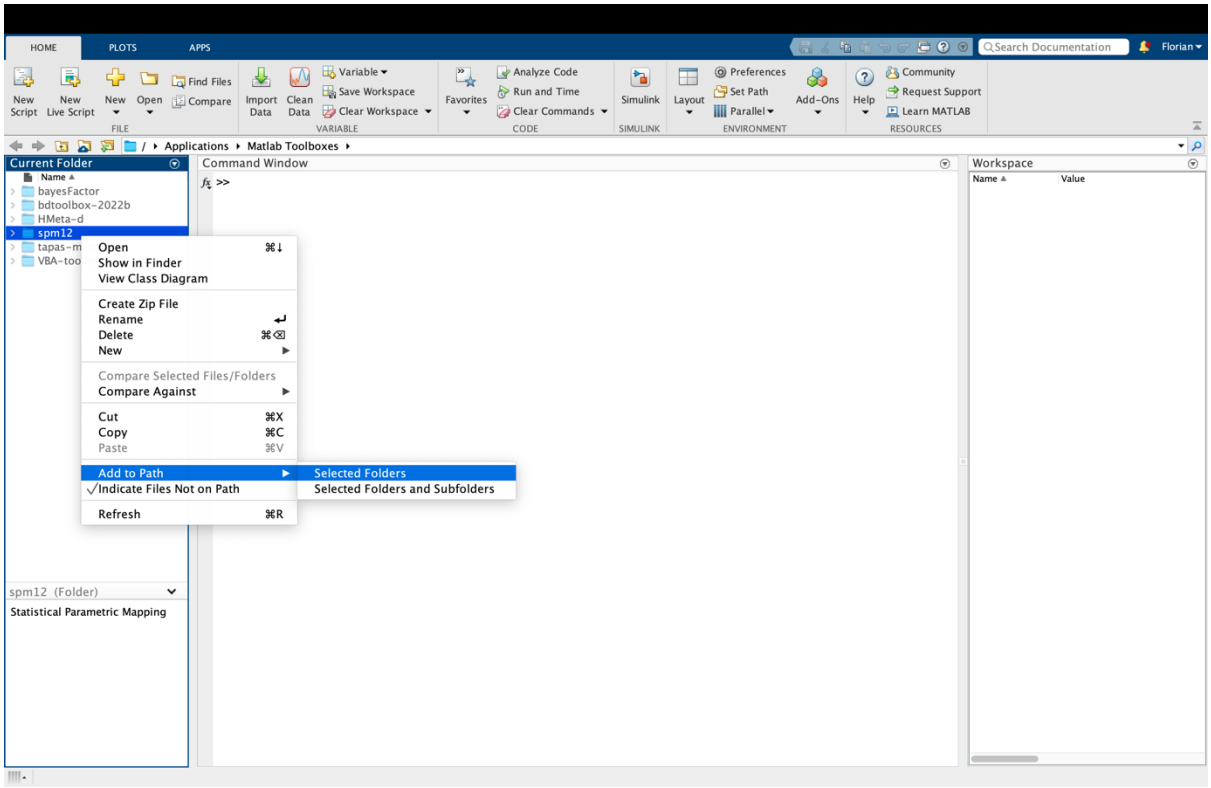
Tutorial B - Active Inference using SPM

Content

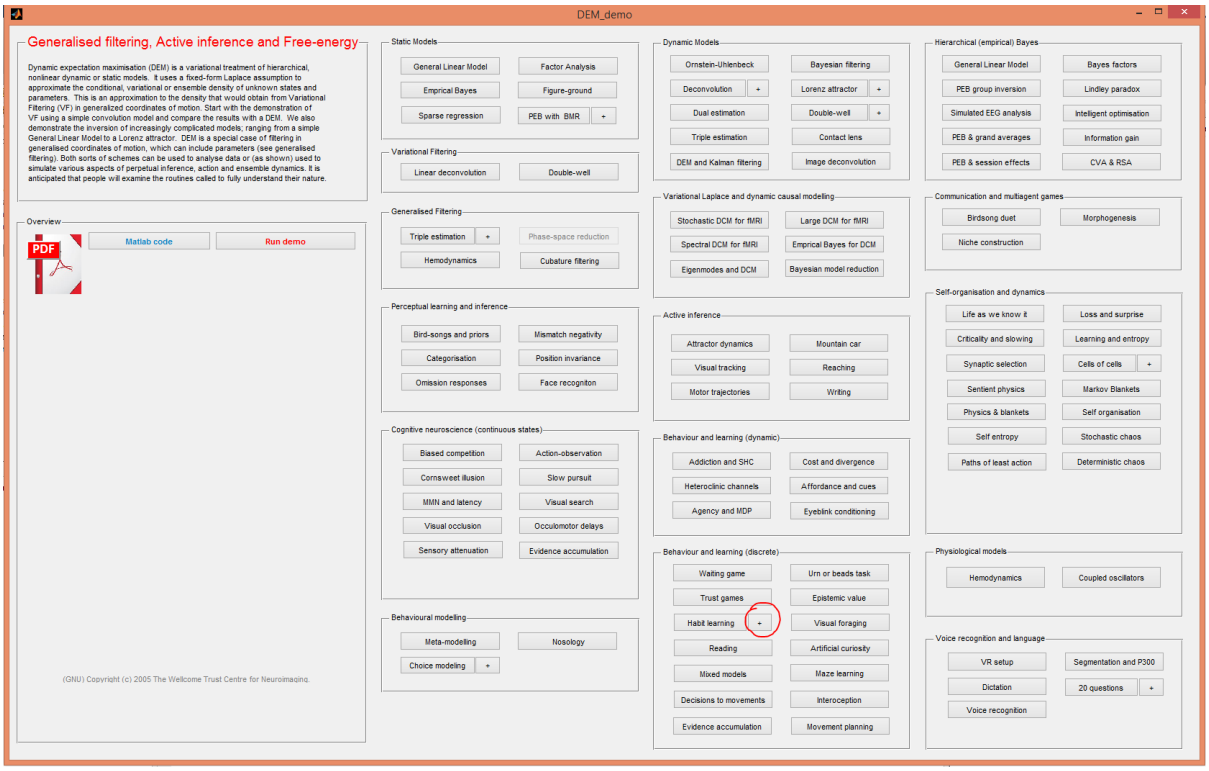
In this tutorial, we will review the theory behind active inference and how to implement it within a partially observable Markov decision process (POMDP). We will then do exercises building generative models of common behavioral tasks, learn how to run simulations, and illustrate the useful properties of this modeling framework and when it is and isn't applicable. Finally, we will work through exercises to learn how to fit active inference models to behavioral data and use parameter estimates as individual difference measures in common computational psychiatry contexts. All tutorial exercises will be conducted in MATLAB.

Installation guide

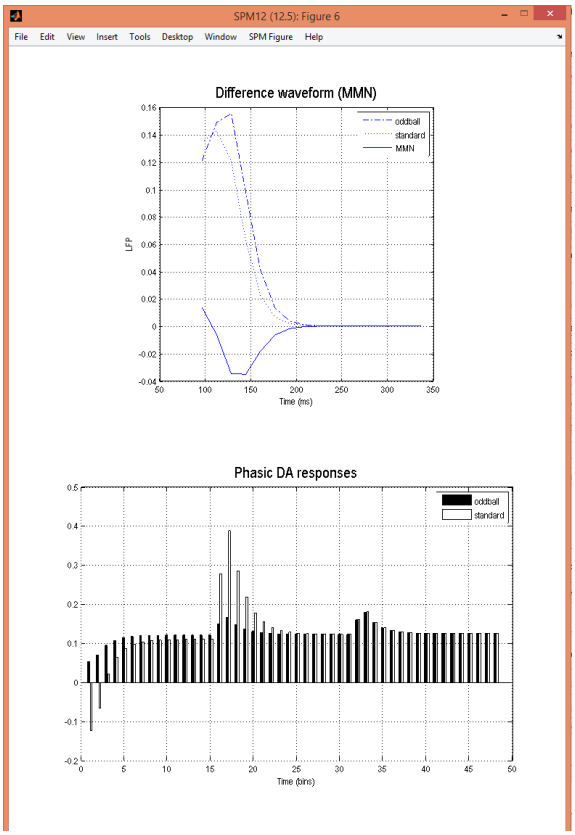
1) Make sure you install Matlab and that you can open and run it: https://www.mathworks.com/products/get-matlab.html
2) Download SPM 12 (https://www.fil.ion.ucl.ac.uk/spm/software/download/).
3) Place the uncompressed spm12 folder in your preferred directory.
4) Open Matlab and add the main SPM-folder (**but not all subfolders**) to your search path from the Matlab 'current folder' window (column on the left in the image below).



5) Next, type 'spm' and 'DEM' into the Matlab command window and press enter to open the DEM.
6) This invokes a graphical user interface that contains several worked examples of active inference (and much more). In the 'Behaviour and learning (discrete)' panel, click on the '+' next to the 'Habit learning' button. Then click 'run demo' (in red text on the left).



7) If this works without errors and you see several SPM figures illustrating different simulations (like the one reproduced below), then you have access to all the functions you need for the practical session and you are ready to go.



Further support

If you have trouble getting to this point before the Practical Tutorial Session, please consult the **#tutorial-helpdesk channel on Discord**. You will be given access to the CPC discord workspace at the beginning of the course. Check if anyone has had the same issue and has managed to solve it and how. If no one else has encountered the same problem, post your question. We will be monitoring the channel and providing support. In addition, given the volume of attendees this year, we would be really grateful if you could assist us by answering queries on Discord yourself if you come across a problem, you know and have solved.

Tutors

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