

MATLAB

(MATrix LABoratory)

www.mathworks.com

TUesday Rabbit Diversion
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“...a high-level language and interactive environment for numerical computation, visualization, and programming.”

MATLAB Windows

MATLAB is an interpreted language - you can see your results as you go. Easy to switch between script mode and command window.

- Command window - where one types the commands
- Command history - saves all commands executed
- Workspace - all variables allocated and assigned
- Can open scripts in Editor - can execute script there
- Can open Help window - extensive

MATLAB Operations

- Regular (element by element) arithmetic and matrix arithmetic (`.*` vs `*`)
- Transpose operation (`'`)
- Lots of functions
- netcdf capability
- control syntax 'for' and 'if'
- array syntax `start:<stride:>end`

Graphics

- The feature that really sold me on MATLAB is the plot editor
- Alternative to specifying all plotting options in the argument list
- Start with simple graphic function like 'plot' or 'contour' then click 'show plot tools and dock figure' in figure window.
- Once customized, 'generate code' to create a script that will produce a plot with same features in future.
- Two common plot routines: plot for line plots; contour for contour plots