8 Plots and Graphing Functions

Many plotting functions and options; we just mention two.

- The function `fplot` plots a curve. In its simplest form it is just provided a function handle.

- The function `plot` creates a plot joining a sequences of points. In its simplest form it is provided two vectors, one with the x-coordinates and one with the y-coordinates.

There are many ways to enhance the plot, do multiple plots, etc. For example, there are style options to change the appearance of the line, and commands to add labels, axes and grids. Also, the command “hold on” allows subsequent plots on the same axes.

Here is code to generate two plots of the function \( f(x) = e^{-x^2} \) (which might ring a bell): one smooth, and one with user-supplied steps.

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**Sample code**

```matlab
% plotter.m
% goddard 2021
eek = @(t) exp(-power(t,2));
fplot( eek );
hold on;
x = -4:4;
y = exp(-x.^2);  % note the dot so that exp acts on x entry-wise
plot(x,y , '--o');  % dashed using o for points
hold off;
```