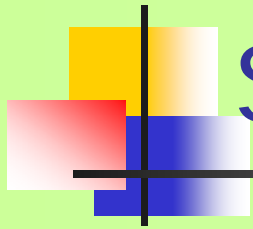




Installing and Demonstrating Cantera 1.7 for Windows

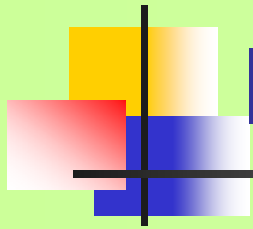
ChE 641

Combustion Modeling



System Requirements

- A PC running MS Windows 2000, or Windows XP
- Matlab (6.5, 2007a/b or 2008a/b)
- Python 2.5
 - Download the Windows installer from <http://www.python.org/ftp/python/2.5/python-2.5.msi>
 - Cantera uses Python to process input files, so it is required even if you will use Cantera from Matlab or another environment
- Numeric Python (NumPy)
 - Only needed if you plan to use Cantera from Python
 - Adds fast array operations to Python
 - Download the Windows installer from http://downloads.sourceforge.net/numpy/numarray-1.5.2.win32-py2.5.exe?modtime=1156438276&big_mirror=0

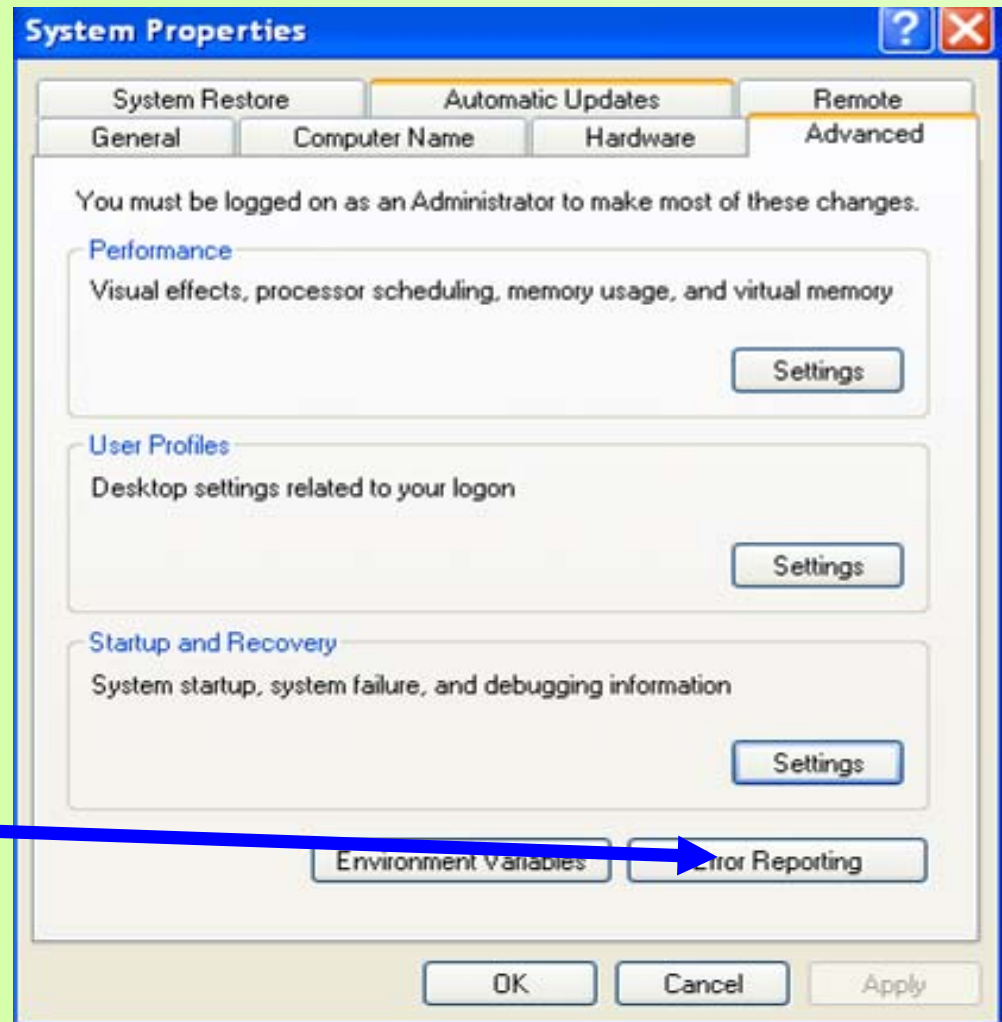


Installation

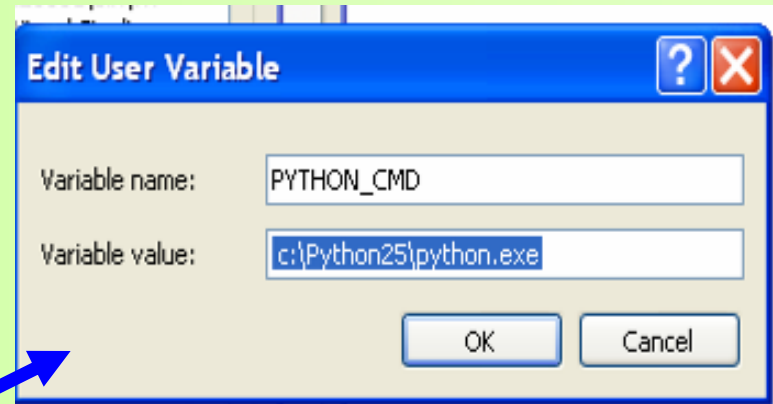
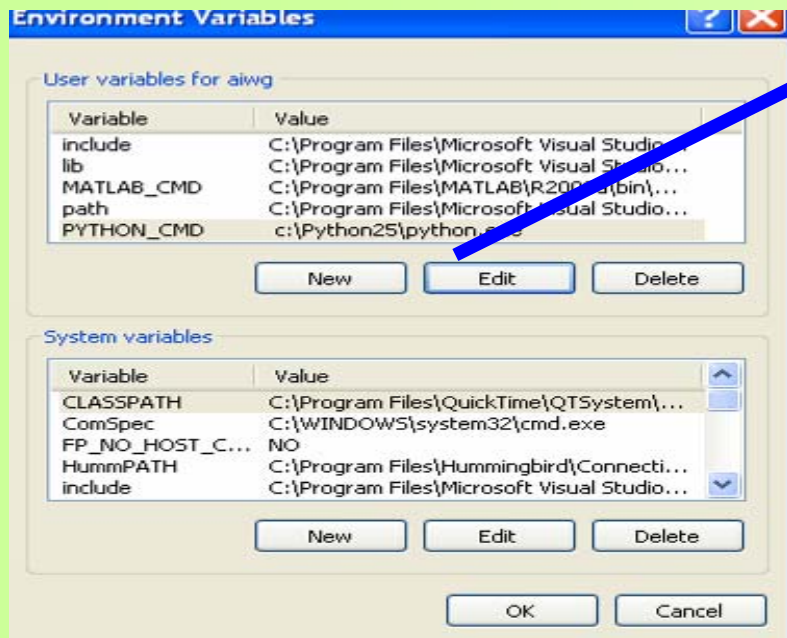
- Cantera 1.7
 - Download the Windows installer from http://downloads.sourceforge.net/cantera/Cantera-1.7.0.msi?modtime=1163522528&big_mirror=0

Add the Python Interpreter to the Path

- Cantera needs to know where to find the Python interpreter
- To edit the system search path, select “System” on the Control Panel to pull up this dialogue box
- Press the ‘Environment Variables’ button



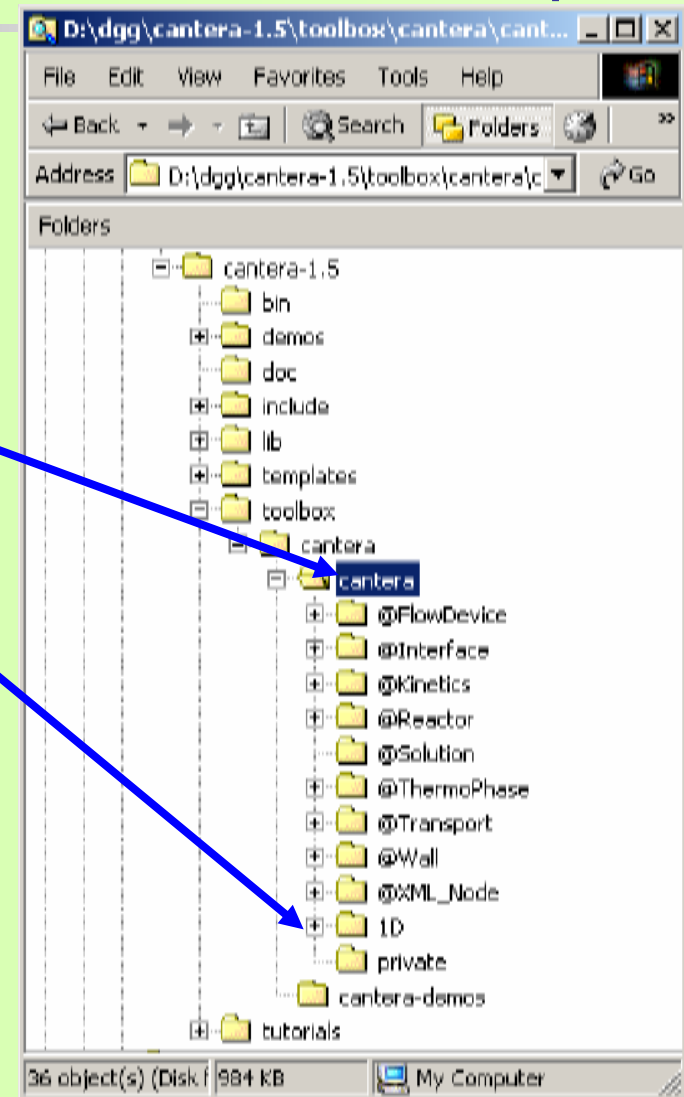
Set the user environment



- Add PYTHON_CMD
c:\Python25\python.exe (or wherever you installed Python 2.5) to the PATH environment variable (user or system)
- Add MATLAB_CMD C:\Program Files\MATLAB\R2008b\bin\win32\MATLAB.exe to the PATH environment variable (user or system)
- Use a semicolon between paths

Put the Cantera Toolbox on the Matlab path

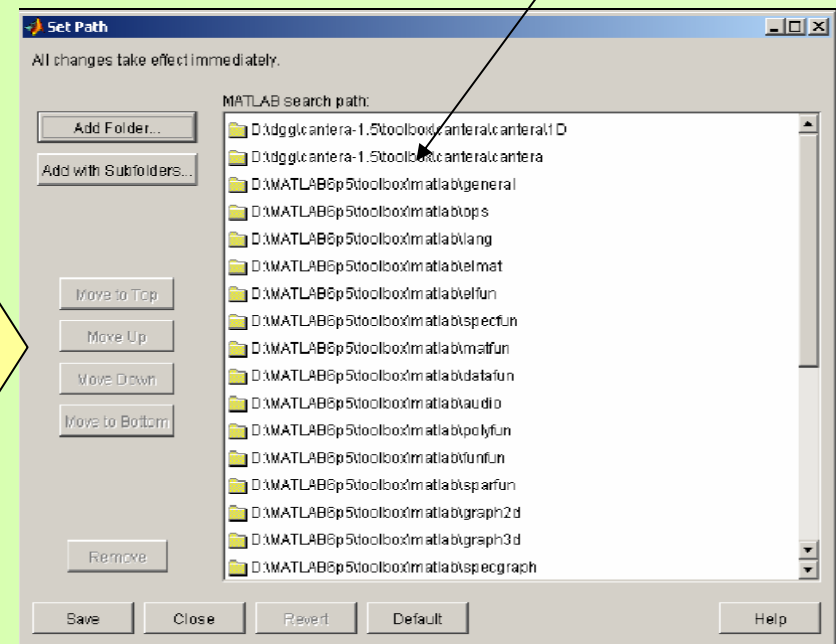
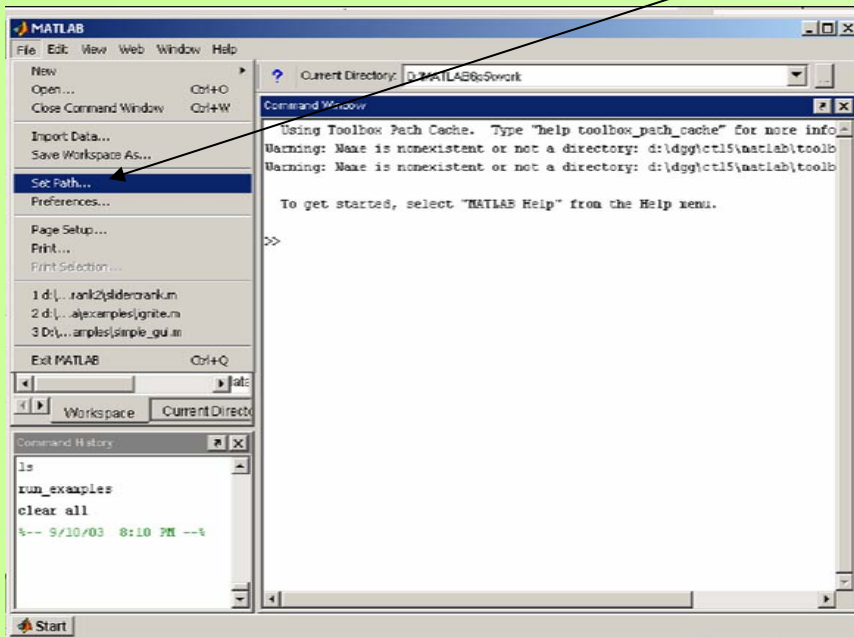
- Add these **two** folders to the Matlab path
- Folder '1D' adds support for one dimensional reacting flows



Setting the Path in Matlab

Choose 'Set Path...' on the File menu

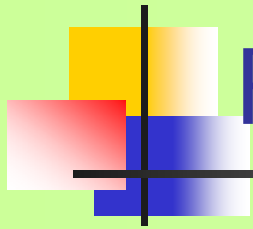
the Cantera Toolbox





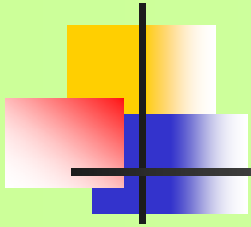
Check the installation

- Running the Python and Matlab demonstration scripts is a good way to test your installation (tutorials, located in C:\Cantera\tutorials\MATLAB\)
- Remember you have to set the current directory or add the path so that Matlab knows where to look for these files



Fix Mixmaster

- Replacing the module
 - C:\Python25\Lib\site-packages\MixMaster\ThermoFrame.py with ThermoFrame.py included in the installation package
- Replace the module
 - C:\Cantera\MATLAB\toolbox\cantera\@ThermoPhase\C:\Cantera\MATLAB\toolbox\cantera\gibbs_RT.m with gibbs_RT.m



Cantera Code Demonstration

- Cantera always uses SI units
- Set up the value of variables (tut1)
 - setTemperature(gas1, 1200)
 - set(gas1, 'Temperature', 900.0, 'Pressure', 1.e5)
 - set(gas1, 'Temperature', 900.0, 'Pressure', 1.e5, 'MoleFractions', 'CH4:1,O2:2,N2:7.52');