Installing Python on Windows for C-RISe Python software

1. You want to first install anaconda or miniconda, as a tool for installing python plus the necessary related packages
2. The fastest way to obtain conda is to install Miniconda, a mini version of Anaconda that includes only conda and its dependencies. If you prefer to have conda plus over 720 open source packages, install Anaconda.
3. We recommend you install Anaconda for the local user, which does not require administrator permissions and is the most robust type of installation. You can also install Anaconda system wide, which does require administrator permissions.
4. **System requirements**
   - 32- or 64-bit computer.
   - For Miniconda—400 MB disk space.
   - For Anaconda—Minimum 3 GB disk space to download and install.
   - Windows, macOS or Linux.
   - NOTE: You do not need administrative or root permissions to install Anaconda if you select a user-writable install location.
5. Download the installer (we want 2.7 version of python):
   - Miniconda installer for Windows.
   - Anaconda installer for Windows.
6. Double-click the .exe file.
7. Follow the instructions on the screen.
   If you are unsure about any setting, accept the defaults. You can change them later.
   When installation is finished, you should find an anaconda prompt window has been installed - from the **Start** menu, open the Anaconda Prompt.
8. Type "conda list" – and a list of installed packages should appear
9. If python has been installed as part of the package, you should see it in the list.

You do not need to uninstall other Python installations or packages in order to use conda. Even if you already have a system Python, or another Python installation you do not need to uninstall, remove, or change any of them before using conda.

10. Install Anaconda or Miniconda normally, and let the installer add the conda installation of Python to your PATH environment variable. There is no need to set the PYTHONPATH environment variable.
11. To see if the conda installation of Python is in your PATH variable:
    - On Windows, open an Anaconda Prompt and run—echo %PATH%.
12. To see which Python installation is currently set as the default:
    - On Windows, open an Anaconda Prompt and run—where python.
13. To see which packages are installed in your current conda environment and their version numbers, in your Terminal window or an Anaconda Prompt, run conda list.
14. We need to add netcdf4, basemap and scipy packages. In your anaconda prompt type
    - "conda install netcdf4"
    - "conda install -c conda-forge basemap" – a special command is needed to install the latest development version.

- "conda install scipy"

Installing Visual Basic on Windows for C-RISe Python Sea Level software

1. The CRISe Sea Level software uses some C routines, so to run the Sea Level software we also need to install Visual Studio (https://visualstudio.microsoft.com/downloads/)
2. Select Visual Studio Community 2017 https://visualstudio.microsoft.com/thank-you-downloading-visual-studio/?sku=Community&rel=15
3. Under workloads menu select Desktop development with C++ and in LH window left default options and added Visual C++ MFC for x86 and x64 and C++/CLI support

Copying and Setting up the Windows versions of the C-RISe Python software

1. It is necessary to setup a copy of the file structure under a new directory. Make a new directory C:\Shared\Software\Windows, and 2 directories under this C:\Shared\Software\Windows\WindWave, and C:\Shared\Software\Windows\SeaLevel
2. For the WindWave code extract all the programmes in WindWave.zip into the C:\Shared\Software\Windows\WindWave directory
3. The SeaLevel Code relies on a number of sub-routines and data files which we need to copy over from the existing directories. It is easiest to copy the whole structure (including files) under :\Shared\Software\SeaLevel into C:\Shared\Software\Windows\SeaLevel
4. You should now have
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\Data
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\figures
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\matlab_code
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\python_code
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\reports
5. Delete the contents of
   C:\Shared\Software\Windows\SeaLevel\SeaLevelValidation\python_code
   and replace with the files extracted from the CRISeSeaLevelPythonCode.zip archive

Running Python on Windows for C-RISe Python software

1. Find the "anaconda prompt" in the windows start window and click on that
2. Check that all the required packages are installed by typing "conda list"
   - You will need "numpy", "basemap", and "netcdf4"
3. We have installed python 2.7 above, to start using python, simply type "Python" (but remember its best to first change directories to where the software is by (e.g):
   - cd \Shared\Software\Windows\WindWave
   - cd \Shared\Software\Windows\SeaLevel\SeaLevelValidation\python_code

4. If you want to create your own code, or edit existing python routines / functions, we suggest you use “spyder”. If you installed the full anaconda package, this should already be available. If you installed “miniconda”, type in the anaconda prompt window:
    - conda install spyder

5. Then – if it has installed correctly, type “spyder”, and the spyder application should open, with a number of windows