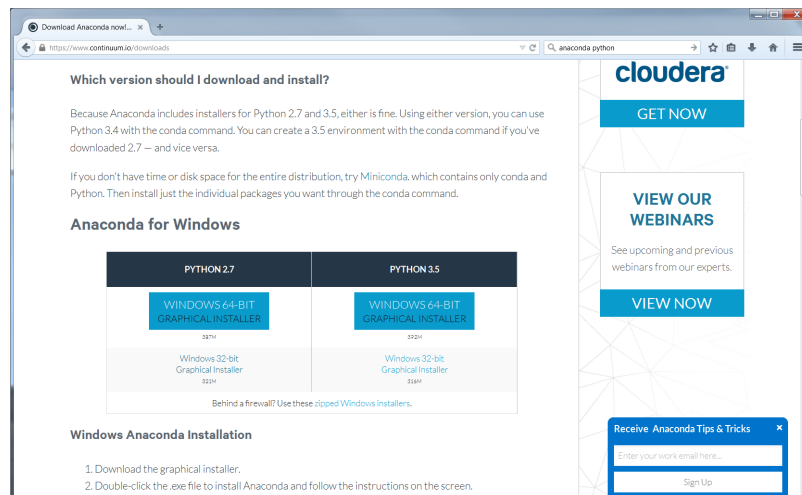# Installation of rsMap3D on Windows Host

These installation instructions assume the use of the Anaconda Python distribution from Continuum Analytics. We use Canopy for these instructions as it is the default Python environment used by the Advanced Photon Source at this time. For these instructions, Anaconda 2.5.0 and the packages provided by Anaconda were used as much as possible. The description written here was put together using a fresh Anaconda install in order to provide as much information as possible for the beginning user.

In order to install run rsmMap3D the user will need to install Anaconda, and install/check the install of a number of other python packages and then install:

- xrayutilities

- spec2nexus

- And then download the source for rsMap3D

Installation and setup of Anaconda
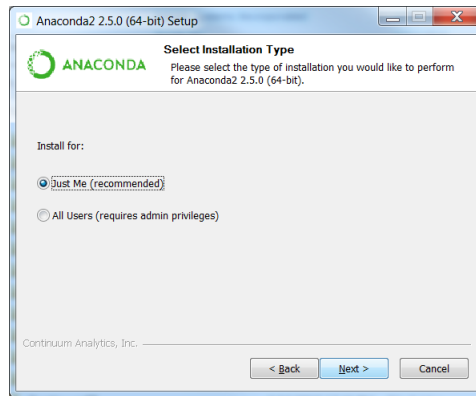
Anaconda is a completly free bundling of Python by Continuum Analytics. Note that although Continuum Analytics does provide Anaconda at no cost, it does provide some additional levels of support for a fee . To install Anaconda Python, go to the download site mentioned above you should see a web page with a section that looks like

These instructions assume that you will install the Python 2.7, 64-bit graphical installer. Launching this installer should present a window like:

Clicking next you will be asked to accept the license agreement. You will then be prompted to select an installation type see image below. Anaconda allows installation on a per user basis ("Just Me") or for all users (requires admin privilege).

This installation assumes selection of "Just Me" which requires only normal user privilege. Before final installation the user will be prompted for installation location and permission to modify the path to include path to installed executables. It is recommended to accept the defaults here. It will take some time to complete the installation since Anaconda provides many common packages by default.

For rsMap3D we need to make sure that the following packages are installed: numpy, vtk, pytables and PyQt4. Installation can be verified by launching an Anaconda prompt from Start->All Programs->Anaconda2 (64-bit). We can verify package installation with

```
conda search <packagename> at the prompt.
```

At this time, Anaconda 2.5.0 is being used and the following packages are available and those not installed by default can be installed with the command

```
conda install <packagename>
```

Required packages

- numpy 1.10.4 is already installed
- pyqt 4.11.4 is already for installation
- vtk 6.3.0 is available for installation
- pytables 3.2.2 is installed
- h5py 2.5.0 is installed
- pil 1.1.7 is available to install

Make sure to install these packages now. Note that we will also need xrayutilities and spec2nexus (described below).

Installing xrayutilities

Xrayutilities is a package written by Dominik Kriegner and Eugen Wintersberger. We are presently using version 1.2.1 of xrayutilities. Although the source code for this package can be downloaded and built as a tar.gz although a precompiled distribution for windows is provided as a wheel file. This wheel is recommended since this file was compile using the Microsoft Visual Studio 2008 compiler (the same used for compiling Anaconda Python).

This wheel file can be installed with

```
pip install xrayutilities-<long version info>.whl
```

Installing spec2nexus

spec2nexus is a python package written by Pete Jemian at the APS. This package provides a subpackage that enables parsing spec files in python. This package has been used in places to read spec files as input for the rsMap3D. Note that rsMap3D requires at least version 2016.216.0. Although the installation instructions suggest this can be installed with the conda installer, this method currently installs an older version. To install the correct version use:

```
pip install spec2nexus
```
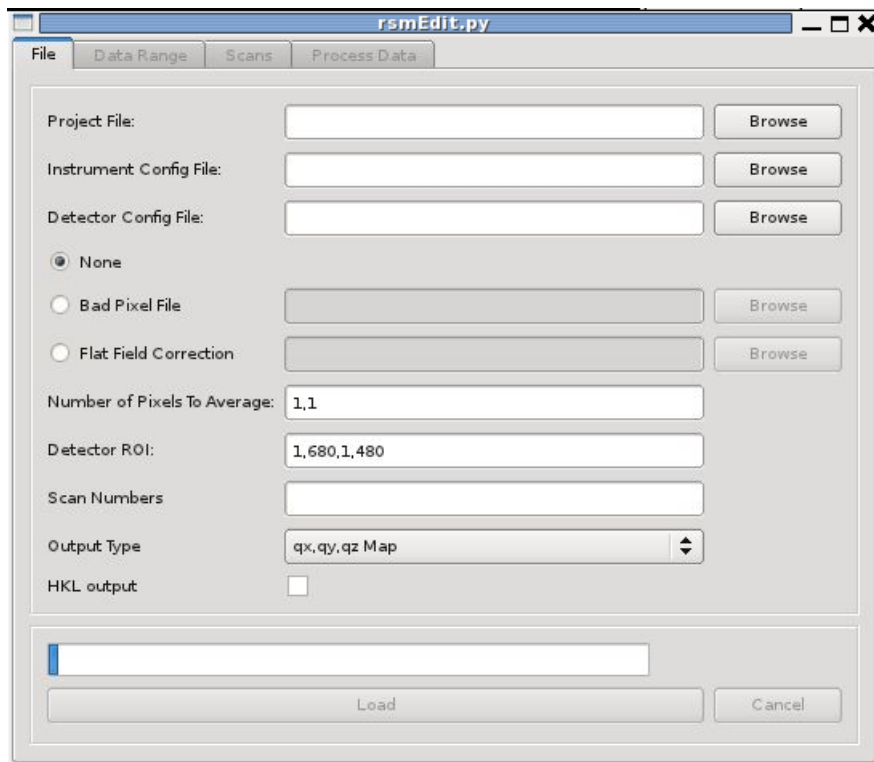
Installing rsMap3D

Unlike the last two packages rsMap3D does not have a setup.py. It is currently installed in a directory, This directory is set in the PYTHONPATH and the application is run.

Tortise Git adds menu options on the left click in explorer. Right click on C:\Users\'username' and select 'Git Clone...' In the window that appears enter https://subversion.xray.aps.anl.gov/RSM/rsMap3D/trunk/.

We can now set the python path and run the application.

```
setenv PYTHONPATH /local/rsmap3d
~/Enthought/Canopy_64bit/User/bin/python -m rsMap3D.rsmEdit.
```

You will then see a window like the following:

You are now ready to start using rsMap3D.