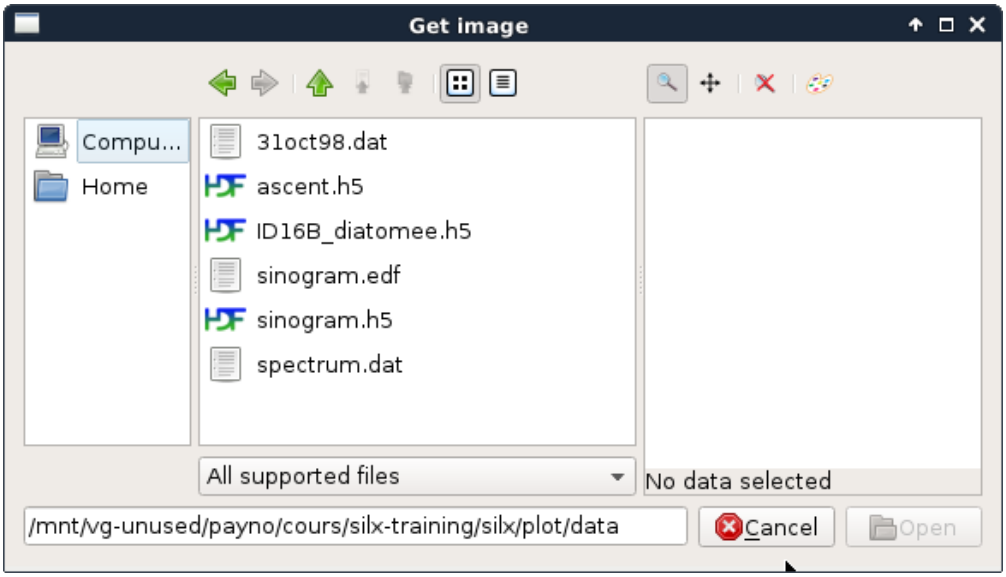
imgCorrectionEx

March 19, 2018

```
In [ ]: %gui qt
```

Same exercise made in io (image correction) but adding the interaction

1 Create two functions



ImageDialog

- `getFlatfield`: to select the flatfield
- `getDark`: to select the dark

To do this use the ImageFileDialog class

- see doc: http://www.silx.org/doc/silx/latest/modules/gui/dialog/imagefiledialog.html
- related example: examples/fileDialog.py

```
In [ ]: from silx.gui.dialog.ImageFileDialog import ImageFileDialog
```

2 Create a function to correct an image from flatfield and dark

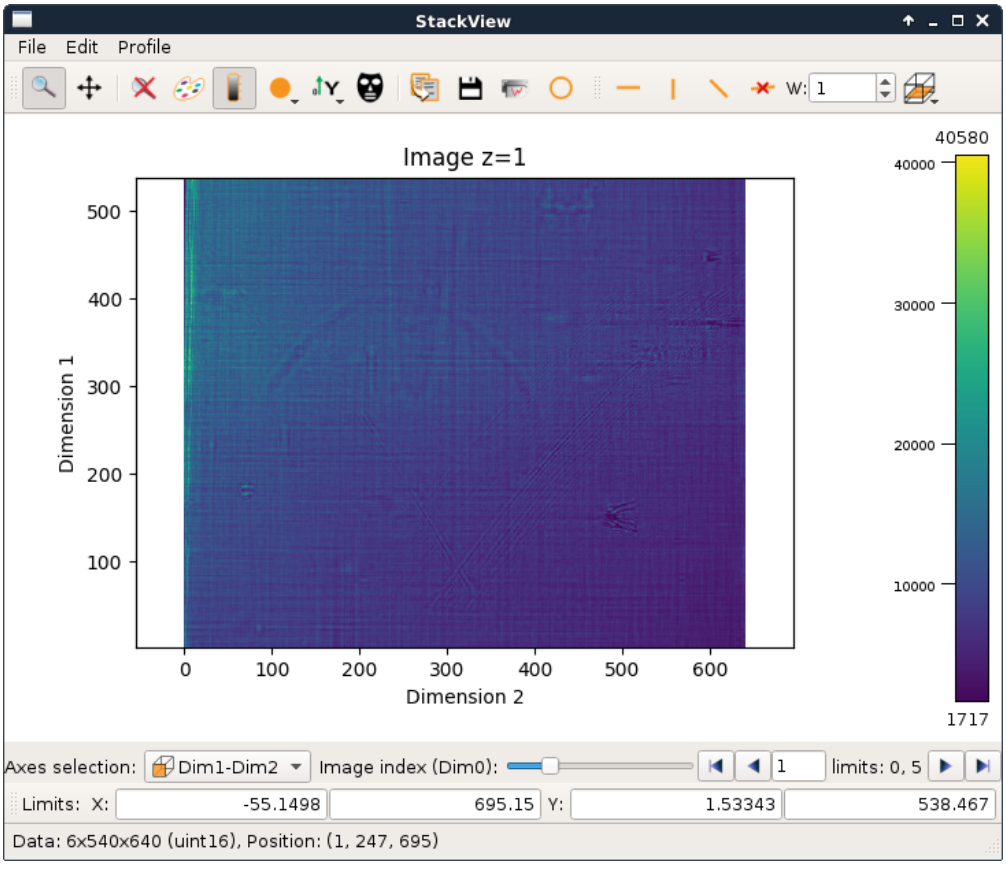
take as input an image, dark and flatfield. Return the normalized image
note: you probably already create it on the io part

3 Select an image and display it raw and normalized

The following function can manage the requested display

```
In [ ]: from silx.gui.plot import Plot2D
        def showRawAndCorrected(raw, corrected):
            plot = Plot2D()
            plot.addImage(data=raw, replace=False, legend='raw')
            plot.addImage(data=corrected, replace=False,
                          legend='corrected', origin=(raw.shape[0], 0))
            plot.show()
```

4 Add an action to apply the correction on a stack of image



ImageDialog

Here is the sample code to plot the stack of image

```
In [ ]: from silx.gui.plot.StackView import StackViewMainWindow
        import h5py
        import numpy

        dataFile = h5py.File('data/ID16B_diatomee.h5')

        mystack = dataFile['scan1']['instrument']['data'][...]

        sv = StackViewMainWindow()
        sv.setStack(mystack)
        sv.show()
```

Here is a function to apply the corection on the stack. Use getStack() function on the `StackViewMainWindow` object to retrieve the stack

```
In [ ]: def applyCorrection(images, flatfield, dark):
            correctedImgs = []
            for image in images:
                correctedImgs.append(applyCorrection(image,
                                                     flatfield=flatfield,
                                                     dark=dark))
            return correctedImgs
```

To define an action

- heritate from PlotAction
- redefine the triggered function
- See http://www.silx.org/doc/silx/dev/modules/gui/plot/actions/examples.html tutorial
- you can also use the PlotAction tutorial.ipynb