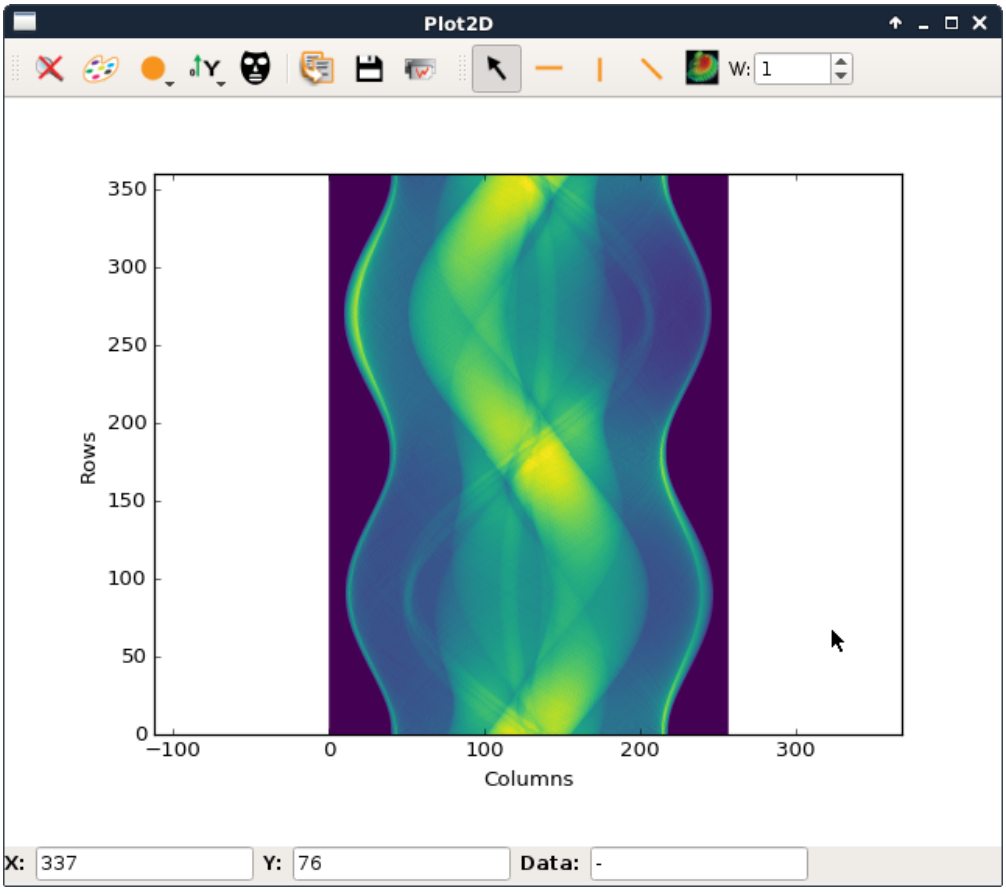
Plot2D

March 14, 2017

```
In [ ]: from silx.gui.plot import Plot2D
        %gui qt
```

1 Simple plot of a 2D image



plot2D

- http://www.silx.org/doc/silx/dev/modules/gui/plot/plotwindow.html
- http://www.silx.org/doc/silx/dev/modules/gui/plot/getting_started.html

1.1 load data from data/lena.hdf5

```
In [ ]: import numpy
        from fabio import edfimage

        edfReader=edfimage.edfimage().read('../data/sinogram.edf')
        data=edfReader.getData()
```

1.2 Plot the image

```
In [ ]: plot=Plot2D()
        plot.addImage(data)  # Plot the 2D data set with default colormap
        plot.show()
```

1.3 Change the color map

```
In [ ]: # changing color map
        plot.clear()
        colormap = {'name': 'viridis', 'normalization': 'linear',
                    'autoscale': True, 'vmin': 0.0, 'vmax': 1.0}
        plot.setDefaultColormap(colormap)
        plot.setKeepDataAspectRatio(True)
        plot.addImage(data)  # Plot the 2D data set with default colormap
        plot.show()
```

1.4 origin keyword

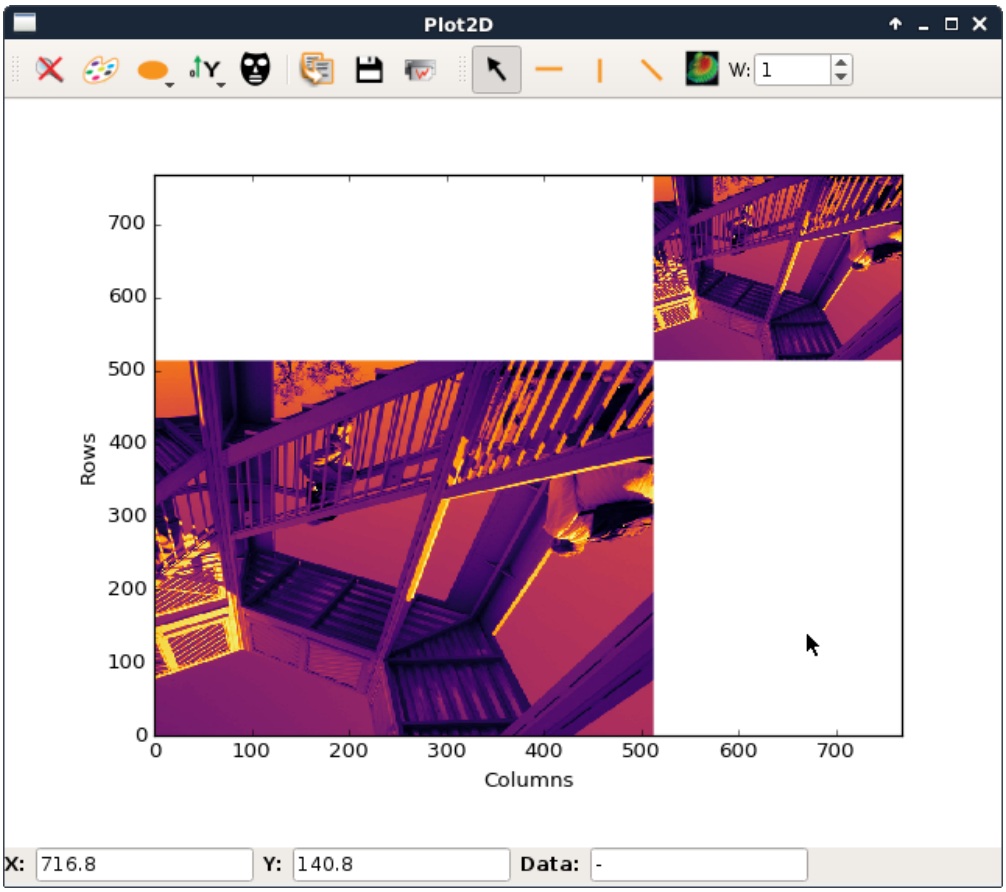
```
In [ ]: # origin
        # Create a RGB image
        plot=Plot2D()
        rgb_image = (numpy.random.random(1000*1000*3) * 255).astype(numpy.uint8)
        rgb_image.shape = 1000, 1000, 3

        plot.addImage(rgb_image, origin=(100, 100))
        plot.show()
```

1.5 scale keyword

```
In [ ]: plot.clear()
        plot.addImage(rgb_image, origin=(100, 100), scale=(0.1, 0.1))
        plot.show()
```

2 multiple image

display the followin image (data is in data/ascent.h5) using only : - data - Plot2D functions



ascent double

2.1 load data

```
In [ ]: # input using .hdf5
        import h5py
        dataPath='../data/ascent.h5'
        f=h5py.File(dataPath)
        data=data = numpy.array(f['data'], dtype='float64')
```

2.2 plot data

```
In [ ]: plot=Plot2D()
        colormap = {'name': 'inferno', 'normalization': 'linear',
                    'autoscale': True, 'vmin': 0.0, 'vmax': 1.0}
        plot.setDefaultColormap(colormap)
        plot.addImage(data, origin=(0, 0), legend='ascent')
        plot.addImage(data, origin=data.shape, legend='ascentsmall',
                      replace=False, scale=(0.5, 0.5))
        plot.show()
```

2.3 Control axes

- change title, X and Y labels

```
In [ ]: plot.setGraphTitle('lenas')
        plot.setGraphXLabel('X axis')
        plot.setGraphYLabel('Y axis')
        plot.show()
```

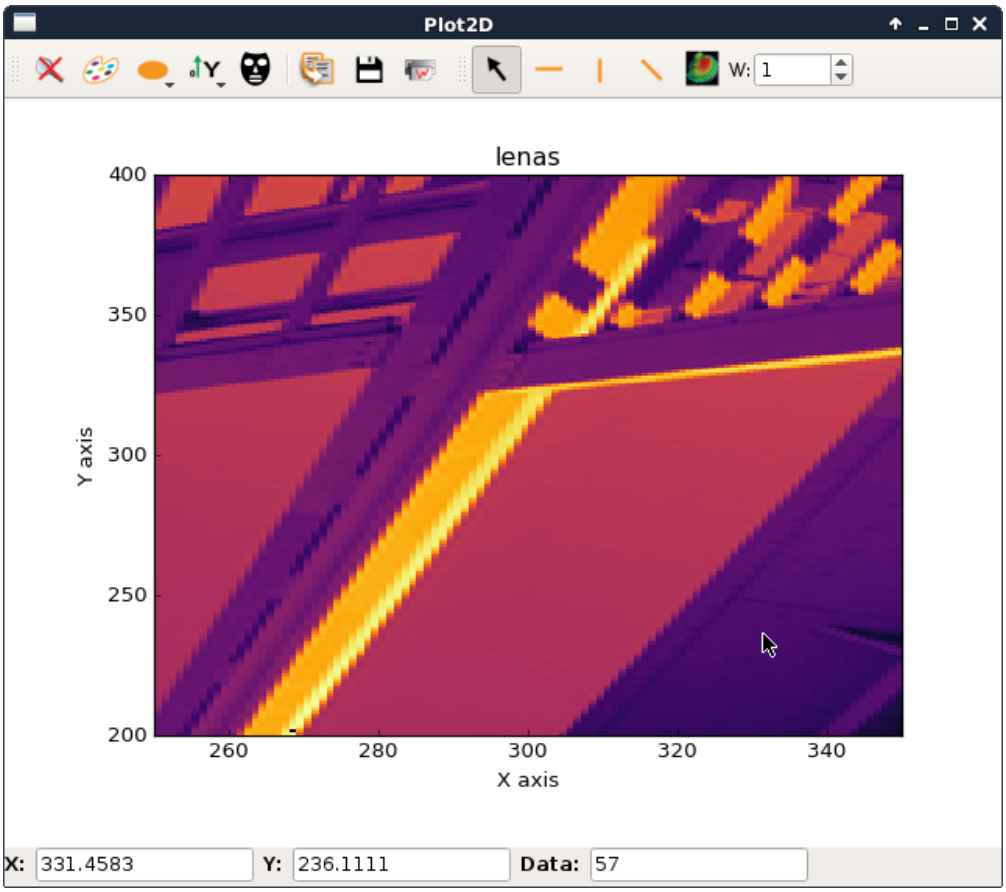
2.4 x and y limits

get the following display:

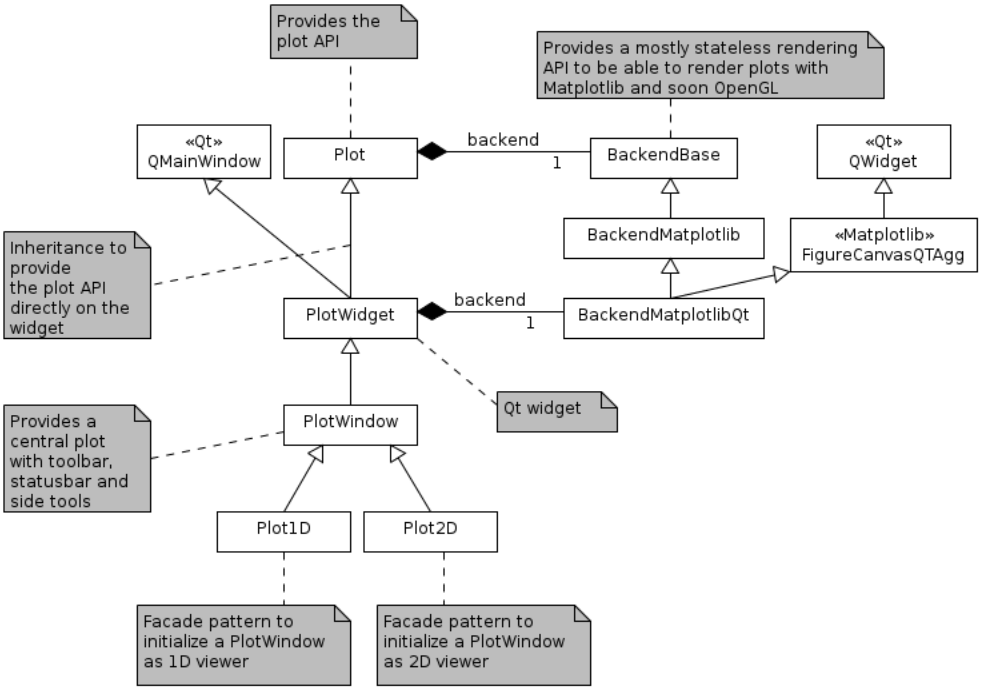
```
In [ ]: plot.setGraphXLimits(250, 350)
        plot.setGraphYLimits(200, 400)
        plot.show()
```

Plot class diagram

```
In [ ]:
```



x and y limits



plot class diagram