

Multi dimensional axes

- provision of multidimensional axes for plotting and analysis in NXdata (example 2d scan)

```
1 / NXroot
2   entry NXentry
3     data NXdata
4       data[n,m,100,100]
5         @signal=1
6       oneaxis[n,m]
7       otheraxis[n,m]
8       q[100,100]
```

Not currently possible.

Proposal by example

```
1 / NXroot
2   entry NXentry
3     data NXdata
4       @signal=I
5       @I_axes=Temperature,Wavelength,Pressure,Q,Q
6       @Q_indices=1,3,4
7       @Wavelength_indices=1
8       @Energy_indices=1
9       @Temperature_indices=0,1,2
10      @Pressure_indices=2
11      I: float[nTemperature,nWavelength,nPressure,128,512]
12      Q: float[nWavelength,128,512]
13      Wavelength: float[nWavelength]
14      Energy: float[nWavelength]
15      Temperature: float[nTemperature,nWavelength,nPressure]
16      Pressure: float[nPressure]
```

- ▶ add attributes to NXdata
- ▶ put signal there
- ▶ keeping all information about the relationship of the dataset local to the group they are combined in makes sense
- ▶ *data_axes* tells us what the main purpose of an axis is
- ▶ *axis_indices* tells us what indices of the *data* you need to put into *axis* to give the corresponding axis value
- ▶ datasets that are not lists in *data_axes* are secondary axes by default