C:\Users\smrTu\OneDrive\Documents\GithubC\CDIF\integrationPublic\hdf5Work\readHDF5.py

# one analysis NXxas from

#dir = "C:/Users/smrTu/OneDrive/Documents/GithubC/CDIF/exampledata/"

# filename = 'FeXAS.nxs'

# there are 26 entries in this file, pull one entry: Fe\_c3d.001

# Fe\_c3d.001/ (Group)

attributes:

NX\_class: NXentry

# Fe\_c3d.001/title (Dataset);

shape: (), dims: 0; dtype: object

Data value: Fe\_c3d.001 [Fe K edge]

# Fe\_c3d.001/start\_time (Dataset);

shape: (), dims: 0; dtype: object

Data value: 2020-08-12 04:34:49

attributes:

NX\_class: NX\_DATE\_TIME

# Fe\_c3d.001/definition (Dataset);

shape: (), dims: 0; dtype: object

Data value: NXxas

attributes:

URL: https://download.nexusformat.org/doc/html/classes/applications/NXxas.html

# Fe\_c3d.001/data/ (Group)

attributes:

NX\_class: NXdata

## Fe\_c3d.001/data/mode (Dataset);

shape: (), dims: 0; dtype: object

Data value: Fluorescence

## Fe\_c3d.001/data/mufluor (Dataset);

shape: (443,), dims: 1; dtype: float64

# Fe\_c3d.001/instrument/ (Group)

attributes:

NX\_class: NXinstrument

## Fe\_c3d.001/instrument/i0/ (Group)

attributes:

NX\_class: NXdetector

### Fe\_c3d.001/instrument/i0/data (Dataset);

shape: (443,), dims: 1; dtype: float64

## Fe\_c3d.001/instrument/ifluor/ (Group)

attributes:

NX\_class: NXdetector

### Fe\_c3d.001/instrument/ifluor/data (Dataset);

shape: (443,), dims: 1; dtype: float64

### Fe\_c3d.001/instrument/ifluor/mode (Dataset);

shape: (), dims: 0; dtype: object

Data value: Unknown

## Fe\_c3d.001/instrument/monochromator/ (Group)

attributes:

NX\_class: NXmonochromator

### Fe\_c3d.001/instrument/monochromator/crystal/ (Group)

attributes:

NX\_class: NXcrystal

#### Fe\_c3d.001/instrument/monochromator/crystal/chemical\_formula (Dataset);

shape: (), dims: 0; dtype: object

Data value: Si

#### Fe\_c3d.001/instrument/monochromator/crystal/d\_spacing (Dataset);

shape: (), dims: 0; dtype: float64

Data value[0]: 1.637514293384398

attributes:

units: Angstroms

#### Fe\_c3d.001/instrument/monochromator/crystal/reflection (Dataset);

shape: (3,), dims: 1; dtype: int64

#### Fe\_c3d.001/instrument/monochromator/energy (Dataset);

shape: (443,), dims: 1; dtype: float64

attributes:

units: eV

## Fe\_c3d.001/instrument/source/ (Group)

attributes:

NX\_class: NXsource

### Fe\_c3d.001/instrument/source/beamline\_fluxestimate (Dataset);

shape: (), dims: 0; dtype: object

Data value: 7.61277e+09

### Fe\_c3d.001/instrument/source/beamline\_foe\_slit\_hpos (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0

### Fe\_c3d.001/instrument/source/beamline\_foe\_slit\_hwid (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0.4000

### Fe\_c3d.001/instrument/source/beamline\_foe\_slit\_vpos (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0

### Fe\_c3d.001/instrument/source/beamline\_foe\_slit\_vwid (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0.2000

### Fe\_c3d.001/instrument/source/beamline\_harmonic\_rejection (Dataset);

shape: (), dims: 0; dtype: object

Data value: 2 Si mirrors, 3 mrad

### Fe\_c3d.001/instrument/source/beamline\_i0\_sensitivity\_number (Dataset);

shape: (), dims: 0; dtype: object

Data value: 50

### Fe\_c3d.001/instrument/source/beamline\_i0\_sensitivity\_unit (Dataset);

shape: (), dims: 0; dtype: object

Data value: pA/V

### Fe\_c3d.001/instrument/source/beamline\_i0volts2fluxout (Dataset);

shape: (), dims: 0; dtype: object

Data value: 3.00883e+09

### Fe\_c3d.001/instrument/source/beamline\_i1\_sensitivity\_number (Dataset);

shape: (), dims: 0; dtype: object

Data value: 100

### Fe\_c3d.001/instrument/source/beamline\_i1\_sensitivity\_unit (Dataset);

shape: (), dims: 0; dtype: object

Data value: pA/V

### Fe\_c3d.001/instrument/source/beamline\_i2\_sensitivity\_number (Dataset);

shape: (), dims: 0; dtype: object

Data value: 20

### Fe\_c3d.001/instrument/source/beamline\_name (Dataset);

shape: (), dims: 0; dtype: object

Data value: 13-ID-E

### Fe\_c3d.001/instrument/source/beamline\_ssa\_slit\_hpos (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0

### Fe\_c3d.001/instrument/source/beamline\_ssa\_slit\_hwid (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0.0150

### Fe\_c3d.001/instrument/source/beamline\_ssa\_slit\_vpos (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0.4500

### Fe\_c3d.001/instrument/source/beamline\_ssa\_slit\_vwid (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0.5000

### Fe\_c3d.001/instrument/source/energy (Dataset);

shape: (), dims: 0; dtype: float64

Data value[0]: 7.0

attributes:

units: GeV

### Fe\_c3d.001/instrument/source/facility\_energy (Dataset);

shape: (), dims: 0; dtype: object

Data value: 7.0 GeV

### Fe\_c3d.001/instrument/source/facility\_name (Dataset);

shape: (), dims: 0; dtype: object

Data value: APS

### Fe\_c3d.001/instrument/source/facility\_ring\_current (Dataset);

shape: (), dims: 0; dtype: object

Data value: 102.2

### Fe\_c3d.001/instrument/source/facility\_ring\_lifetime (Dataset);

shape: (), dims: 0; dtype: object

Data value: 0

### Fe\_c3d.001/instrument/source/facility\_xray\_source (Dataset);

shape: (), dims: 0; dtype: object

Data value: undulator 36mm, 66 poles

### Fe\_c3d.001/instrument/source/name (Dataset);

shape: (), dims: 0; dtype: object

Data value: APS, undulator 36mm, 66 poles, 13-ID-E

### Fe\_c3d.001/instrument/source/probe (Dataset);

shape: (), dims: 0; dtype: object

Data value: X-ray

### Fe\_c3d.001/instrument/source/type (Dataset);

shape: (), dims: 0; dtype: object

Data value: X-ray Source

# Fe\_c3d.001/sample/ (Group)

attributes:

NX\_class: NXsample

# Fe\_c3d.001/scan/ (Group)

attributes:

NX\_class: NXscan

## Fe\_c3d.001/scan/column\_labels (Dataset);

shape: (35,), dims: 1; dtype: object

## Fe\_c3d.001/scan/data (Dataset);

shape: (443, 35), dims: 2; dtype: float64

## Fe\_c3d.001/scan/edge\_energy (Dataset);

shape: (), dims: 0; dtype: object

Data value: 7112.000

## Fe\_c3d.001/scan/end\_time (Dataset);

shape: (), dims: 0; dtype: object

Data value: 2020-08-12 04:49:40

## Fe\_c3d.001/scan/legend (Dataset);

shape: (), dims: 0; dtype: object

Data value: Start, Stop, Step, K-space, Time

## Fe\_c3d.001/scan/nCol (Dataset);

shape: (), dims: 0; dtype: int64

Data value[0]: 35

## Fe\_c3d.001/scan/nP (Dataset);

shape: (), dims: 0; dtype: int64

Data value[0]: 443

## Fe\_c3d.001/scan/region1 (Dataset);

shape: (), dims: 0; dtype: object

Data value: -60.000, -10.000, 2.500 False 2.00

## Fe\_c3d.001/scan/region2 (Dataset);

shape: (), dims: 0; dtype: object

Data value: -10.000, 19.997, 0.100 False 2.00

## Fe\_c3d.001/scan/region3 (Dataset);

shape: (), dims: 0; dtype: object

Data value: 2.291, 8.500, 0.050 True 2.00

## Fe\_c3d.001/scan/scan\_mode (Dataset);

shape: (), dims: 0; dtype: object

Data value: Unknown

## Fe\_c3d.001/scan/start\_time (Dataset);

shape: (), dims: 0; dtype: object

Data value: 2020-08-12 04:34:49

## Fe\_c3d.001/scan/xrayedge/ (Group)

attributes:

NX\_class: NXxrayedge

### Fe\_c3d.001/scan/xrayedge/edge (Dataset);

shape: (), dims: 0; dtype: object

Data value: K

### Fe\_c3d.001/scan/xrayedge/element (Dataset);

shape: (), dims: 0; dtype: object

Data value: Fe