Fusion Data Framework Documentation

Release 0.0.0

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October 06, 2015

CONTENTS

Fusion Data Framework (FDF) is a data access, management, and visualization framework for magnetic fusion experiments.

Repository: https://github.com/Fusion-Data-Framework/fdf

Documentation: PDF

CHAPTER

ONE

ABOUT FDF

Fusion Data Framework (FDF) is a data access, management, and visualization framework for magnetic fusion experiments.

Repository: https://github.com/Fusion-Data-Framework/fdf

Documentation: HTML or PDF

Submit bugs or feature requests: https://github.com/Fusion-Data-Framework/fdf/issues

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To contribute to the FDF project, please contact John, David, Kevin, or Howard.

CHAPTER

TWO

USER GUIDE

CHAPTER

THREE

CODE REFERENCE

3.1 Module factory.py

Root module for the FDF package.

Classes

- Machine - root class for the FDF package
- Shot - shot container class
- Logbook - logbook connection class
- Container - diagnostic container class
- Node - mdsplus signal node class
- FdfError - error class for FDF package

Usage:

```
>>> import fdf
>>> nstx = fdf.Machine('nstx')
>>> nstx.s140000.logbook()
>>> nstx.addshots(xp=1048)
>>> nstx.s140000.mpts.plot()
```

3.1.1 Class Machine

class `factory.`**`Machine`**(*name='nstx'*, *shotlist=[]*, *xp=[]*, *date=[]*)

Factory root class that contains shot objects and MDS access methods.

Basic class initialization is performed as follows: >>>nstx = Machine(name='nstx')

the Machine class contains a model shot object: nstx.s0

shot data can be accessed directly through the Machine class: >>> nstx.s141398 >>> nstx.s141399

alternatively, a list of shot #'s may be provided during initialization: >>>nstx = Machine(name='nstx', shotlist=[141398, 141399])

or added later using the addshot method: >>>nstx.addshot([141398, 141399])

3.1.2 Class Shot

class `factory.`**`Shot`**(*shot*, *root=None*, *parent=None*)

3.1.3 Class Logbook

class `factory.`**`Logbook`**(*name='nstx'*, *root=None*)

3.2 Module fdf_signal.py

fdf-signals.py - module containing Signal class

3.2.1 Classes

- Signal - signal class for data objects

Created on Tue Jun 23 2015

@author: hyuh

3.2.2 Class Signal

class `fdf_signal.`**`Signal`**(***kwargs*)

sig=fdf.Signal(signal_ndarray, units='m/s', axes=['radius','time'], axes_values=[ax1_1Darray, ax2_1Darray], axes_units=['s','cm']

e.g.: mds.Signal(np.arange((20*10)).reshape((10,20)), units='keV', axes=['radius','time'], axes_values=[100+np.arange(10)*5, np.arange(20)*0.1], axes_units=['s','cm'])

or an empty signal: s=mds.Signal() default axes order=[time, space] sig=fdf.Signal(units='m/s', axes=['radius','time'], axes_values=[radiusSignal, timeSignal])

3.3 Module fdf_globals.py

fdf_globals.py contains package-level constants

Created on Thu Jun 18 11:18:16 2015

@author: ktritz

CHAPTER

FOUR

LICENSE

CHAPTER

FIVE

INDICES AND TABLES

- genindex
- modindex
- search

f

F

L

M

S