LoFASM Documentation

Release 1

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class lofasm.bbx.bbx.**LofasmFile**(*lofasm_file*, *verbose=False*, *mode='read'*, *gz=None*)
> Class to represent .bbx-type data files for LoFASM.

> Currently, the only data format supported is 'LoFASM-filterbank'.

> **add_data**(*data*)
>> add BBX data to memory to be written to file.

>> Write 1d or 2d data to memory to be written to disk. If invoked with a new file then the dimension fields in the metadata will be set.

>>> **Parameters data** (*numpy.ndarray*) – Data array to be added to memory *data.ndim* must be either 1 or 2. The data type of the elements in the stored array will be inferred from *data* Supported data types are np.complex128 and np.float64.

>>> **Raises**

>>> - AssertionError – If file is not opened in write mode.

>>> - NotImplementedError – If the dimensions of *data* are not supported.

>>> - ValueError – If either the number of channels in *data* or the data type doesn't match the pre-existing data, if there is any.

> **close**()
>> close file object

> **read_data**(*num_time_bin=None*)
>> Parse data block in LoFASM filterbank file and load into memory as *self.data*.

>> The resulting data array in self.data is stored as a 2d array with dim1 as the horizontal axis and dim2 as the vertical axis.

>> If reading a typical LoFASM-filterbank file then the x-axis will represent the time bins and the y-axis will represent the frequency bins.

>>> **Parameters num_time_bin** (*int*) – The number of time bins to read. If not provided, then attempt to read the entire file. If *num_time_bin* is larger than the number of time bins in the file then read the entire file. A value of 0 will result in nothing being read.

>>> **Raises** AssertionError – If file is not open for reading

> **set**(*key*, *val*)
>> Set header or metadata fields

>> Set or create header comment fields. If the field *key* exists then its value will be overwritten. If the field does not exist, then it will be created as a new comment field.

>> If *key* exists as part of the metadata field, then the value will be overwritten.

>>> **Parameters**

>>> - **key** (*str*) – Header field name as a string.

>>> - **val** (*str, int, float*) – Value that header field will be set to

> **write**()
>> Write current data contents to disk.

>> If at the beginning of the file write the BBX header first, then the data.

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