1.1.4 almati2ms - Tool

Package alma
Module alma

A tool for converting ALMA-TI format data to a measurement set
include "almati2ms.g"

Description
The almati2ms tool contains functions to convert data stored in the ALMA-TI external format into an AIPS++ MeasurementSet (MS). The ALMA-TI format is described in ALMA Computing Memo. No. 15 (Lucas and Glendenning 2001)
The almati2ms tool is most easily run using the global function almatifiller. More fine-grained control can be achieved by creating an individual almati2ms tool and setting the functions on the tool directly. This may be more useful in some cases, especially scipring. The tool functions fall into the following categories:

1. Create an almati2ms tool
2. Set general filler options
3. Select which data are to be filled
4. Start the filler
5. Remove the tool

Creating a almati2ms tool
The only way to create a almati2ms tool is to use the almati2ms constructor. Calling this function will start a precompiled executable, called almati2ms, usually running on your machine. This executable executes all the almati2ms functions. The almati2ms constructor requires specification of the output MS file name, the input ALMA-TI FITS file and a flag to indicate if the new FITS data are to be appended to or overwrite an existing MS.

Set general filler options
The general filler options are specified using the function setoptions. These parameters control whether the output MS data are to be written in compressed or uncompressed mode and whether the sub-band data are to be combined per sideband into a common spectral window.

Select which data are to be filled
The select function is provided to allow selection of a subset of the input ALMA-TI data. At present the options are provided to select an observing

mode (as stored in the ALMA-TI DATAPAR table) and which particular set of channel-zero data are to be filled.

Start the filler
Once an almati2ms tool has been created and the selection and general filler options set, the data can be filled by running the fill function.

Removing the tool
When you have finished with the almati2ms you should shut down the process, using the done function. Once a tool is shut down it can no longer be used. This also closes the output measurement set.

Example
The following example shows the minimum necessary to run the almati2ms tool.
The first line makes all the definitions for this tool available to the user. The second line calls the constructor and specifies the input and output files. The third sets a general option of no compression of the output file. The fourth states that only observing mode CORR and the time-averaged channel-zero continuum data should be filled. The fifth line starts the copying process and the sixth line closes the tool.

```
include 'almati2ms.g'                                                 #1
a := almati2ms(msfile='output.ms', fitsin='ALMATI.fits', append=F) #2
a.setoptions(compress=F)                                              #3
a.select(obsmode='CORR', chanzero='TIME_AVG')                         #4
a.fill()                                                              #5
a.done()                                                              #6
```

This example could also have been achieved direclty using the almatifiller global function. This global function will execute all almati2ms tool functions in the sequence indicated above and, in addition, allows multiple input ALMA-TI files to be specified using a directory name and file modifier pattern. This is illustrated below:

```
include 'almati2ms.g'                                                 #1
almatifiller(msfile='output.ms', fitsdir='.', pattern='ALMATI*",
             append=F, compress=F, obsmode='CORR',
             chanzero='TIME_AVG', dophcor=F)                                    #2
```

Constructors

almati2ms	Construct an almati2ms tool.

Functions

select	Input data selection
setoptions	Set general filler options

almati2ms - Constructor

Package	**alma**
Module	**alma**
Tool	**almati2ms**

Construct an almati2ms tool.

Synopsis

almati2ms(msfile, fitsin, append, host, forcenewserver)

Description

This constructor is used to create an almati2ms tool. The host argument specifies on which networked machine the precompiled almati2ms process should be started. The default value of unset starts it on the current system.

Arguments

msfile	Output MS file name Allowed:Table name Default: ”
fitsin	Input ALMA-TI FITS file Allowed:String Default: ”
append	True if appending to an existing MS Allowed:Boolean Default: F
host	The host on which the almati2ms should be run Allowed:string Default: unset
forcenewserver	Always start a new server Allowed:Boolean Default: F

Returns

An almati2ms tool

Example

```
include 'almati2ms.g'
a := almati2ms(msfile='ALMA.ms', fitsin='ALMA-TI.fits', append=F);
a.fill()
a.done()
```

This example creates an almati2ms tool, sets the data source as a disk file called ALMA-TI.fits, and specifies that the data should be written to an output MS called ALMA.ms. The MS will be over-written if it already exists.

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almati2ms.setoptions - Function

Package	**alma**
Module	**alma**
Tool	**almati2ms**

Set general filler options

Synopsis
setoptions(compress, combinebaseband)

Description

This function specifies the general filler options which are to be used. These concern the compression mode for the output MS and whether the sub-bands should be filled to a common spectral window per side-band.

Arguments

compress	True if compressed MS output required Allowed: Boolean Default: F
combinebaseband	True if sub-bands are to be combined Allowed: Boolean Default: F

Returns
T or F

Example

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almati2ms.select - Function

Package	**alma**
Module	**alma**
Tool	**almati2ms**

Input data selection

Synopsis
select(obsmode, chanzero)

Description

This function can be used to select a sub-set of the input ALMA-TI data. At present this allows selection on observing mode and channel-zero type.

Arguments

obsmode	Observing mode (from ALMA-TI DATAPAR) Allowed:String Default: ”
chanzero	Channel-zero selection options Allowed:String:'NONE'—'TIME_AVG'—'TIME_SAMPLED' Default: 'NONE'

Returns
T or fail

Example

1.1.5 almatifiller - Function

Package	**alma**
Module	**alma**