HELP ON:
Converters

atHelp

July 21, 2013

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Part I

Converters

Chapter 1

AT2G4BL

ATtoG4BL.m
function [outtext]=ATtoG4BL(P_0,particle,folder)
tansform AT structure into G4BL input file.

Simone Maria Liuzzo PhD@ESRF 11-oct-2012

1.1 Example

Other Files
Other Files

Chapter 2

AT2MAD8

AT_2_mad8.m
this functions converts the AT lattice AT_ring in mad8 format.

2.1 Example

Other Files
Other Files
Other Files
S10.mat
mad8elemdef.elem
mad8elemdef_ARCA_INJ_def.mad8
mad8elemdef_ARCB_INJ_def.mad8
mad8elemdef_ARC_CELL2_def.mad8
mad8elemdef_RING_FF_def.mad8

Chapter 3

AT2MADX

AT2_mod_MADX.m
transforms the THERING output of AT into a madx readable file.

tuned for DIAMOND.

made by Simone Maria Liuzzo 28-6-2011 (PhD)

AT_2_madX.m
this functions converts the AT lattice AT_ring in mad8 format.

3.1 Example

Other Files
Other Files

Chapter 4

MAD82MADX

mad8TOmadx.m
converts mad8 sequence files to madX

function [seqfileMADX]=mad8TOmadx(seqfilemad8)

This procedure reads a saved sequence in
mad8 (SAVE,FILE='seqfilemad8';)
and converts it to madx sequence
every = goes to :=
the order of the declarations is the same in the two files.

works also with single mad8 files not containing comands, only definitions.
does not translate call to files since those may change name

parameters:
- seqdilemad8=name of the mad8 lattice file
- periodname (optional)= name of the period to use in madx (default is the filename)

Simone Maria Liuzzo PhD@LNF 25-11-2011
update 29-2-2012 : corrected a bug that would not translate correctly markers, kickers and monitor declared only by element name ("BPM: monitor" would not convet properly)

4.1 Example

Other Files
Other Files

Chapter 5

MADX2AT

ParseAtributesMADX_2_AT.m
determines atribute and sets field in sxsi structure AT

created 6-sept-2012

atfrommadx.m
tansform madX sequence file (savesequence) file into AT lattice structure.

This procedure reads a saved lattice (sequence in madx) in madX
and converts it to an AT lattice

(madx comands to save the sequences :

_____ MADX code _____
use,period=sequencename1;
use,period=sequencename2;
use,period=sequencename2;
SAVE,FILE='seqfilemadX.seq';
_____

seqfilemadX.seq will contain sequencename1 sequencename2 sequencename3
in the correct format in a single file

)

The routine outputs a Matlab macro with all the AT defitions and variables as

in the madX file

The order of the declarations is the same in the two files.
declarations that contain other variables are moved to the end. (this may not be enough)

Works also with single madX files not containing comands, only definitions.

parameters:
- seqfilemadX=name of the mad8 lattice file
- E0 = design energy
- outfilename (default: seqfilemadX_AT_LATTICE.mat)

default pass methods:
quadrupoles : StrMPoleSymplectic4Pass
dipole : BndMPoleSymplectic4Pass
multipole : StrMPoleSymplectic4Pass
sextupole : StrMPoleSymplectic4Pass
thinmultipole : ThinMPolePass
correctors : ThinMPolePass
cavity : DriftPass

buildATLattice.m

given a list (cell array) of elements with specified field Spos (center of element (madx default)) in a
vector returns a cell array with elements without Spos field and appropriate Drifts spaces between. Drifts of the same length have the same name.

reshapeToCellArray.m

if CEL_CEL is a cell array of structures and cell arrays it converts it a cell array of structures.

5.1 Examples

convertMADXtoATExample.m

Other Files
dbatestsbend2.seq
low_emit_s10E_save.seq
low_emit_s10E_save_AT_LATTICE.mat **Other Files**

Chapter 6

MADX2G4BL

madx2g4bl.m
function [outtext]=madx2g4bl(P_0,particle,folder)
tansform madx file into G4BL input file.

Simone Maria Liuzzo PhD@LNF 11-jul-2011

6.1 Example

Other Files
Other Files
Other Files
Converters_help.aux
Converters_help.log
Converters_help.pdf
Converters_help.synctex.gz
Converters_help.tex
Converters_help.toc