

**Conversion of SYNCH Input Data Format  
to DIMAT (MAD) Input Data Format**

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The SSC lattice is maintained as a SYNCH<sup>1</sup> input data file. For example the lattice used for the Conceptual Design Report is kept in the input file

CSA2::LBL103:[SSCDB.CDRLATTICE]CDRCOLL.DAT

A SYNCH run output is in the file

CSA2::LBL103:[SSCDB.CDRLATTICE]CDRCOLL.OUT

The input data formatting differs in essential ways from the DIMAT<sup>2</sup> or MAD<sup>3</sup> input data format. In order to make available the official SSC lattice to DIMAT/MAD users, a conversion routine has been constructed to convert SYNCH input data to DIMAT input data. The MAD user can trivially convert DIMAT input data to MAD input data.

The conversion strips away everything in the SYNCH data file except parameter, beam element, and line definitions. It reformats these definitions into DIMAT digestable form and, importantly, converts bizarre name characters in SYNCH, such as . , - + # ' \* , into digestable name characters for DIMAT. The following character substitutions are made:

ZD	for	.
ZC	for	,
ZA	for	*
ZN	for	#
ZW	for	\$
ZZ	for	&
ZP	for	+
ZM	for	-

/noindentThe user must check the SYNCH data file names for possible confusion. For example, names ZDCD and .CD both become ZDCD in this conversion.