

Chapter 4

M C N P I N P U T S T R U C T U R E

- All input lines are limited to 80 columns.
- A \$ sign terminates data entry, i.e. everything following the \$ sign is a comment.
- Data entries are separated by one or more blanks.
- Blank lines are used as delimiters or as an optional terminator.
- A comment card must start with a C, followed by a blank, somewhere in columns 1 to 5.
- Cell, surface and data cards must start within the first five columns.
- Blanks filling the first five columns indicate a continuation of the data from the last named card, unless an & appears at the end of the previous line the data can be in columns 1 to 80.

The following card blocks are usually required

Cell Cards: terminated by a blank line delimiter.

Surface Cards: terminated by a blank line delimiter

Data Cards: blank line delimiter is optional. Data cards include:

Mode: type of primary and secondary particles.

Cell and Surface Parameters: importance cards.

Source Cards.

Tally Specification Cards.

Material Specification.

Cut-off Parameters: including the number of histories.

Since MCNP starts, after the title card, with surface and cell definitions, we start first by addressing geometry specifications.

4.1 Work Problems

1. In addition to the above set of cards, MCNP allows optional
 - (a) Message block.
 - (b) Title card.
 - (c) Comment cards.
 - (d) Additional information, not used by the code (Anything else).

After consulting the manual, explain the use of each of the above and determine its location in the input (INP) file.

2. MCNP has two types of INP files, one for an *Initiate-Run* and the other for a *Continue-Run*. Explain the difference between the two types, in terms of their use and allowed input information.