

VI.A. THE INPut FILE

SAMMY's INPut file contains essentially three types of information. The first is a set of command statements that define the particular case to be run; these are discussed in detail in Section VI.A.1. The second type consists of spin group and channel definitions, and the third is miscellaneous other information. Table VI A.1 gives details about the second and third types.

Information in the INPut file is categorized into "card sets." One or more lines of input are included in each card set. The categories are described here, and details are given in Table VI A.1.

Card set 1 of the table contains a title, which is reproduced in the output LPT file (see Section VII.A) but is otherwise unused.

Card set 2 contains miscellaneous information, including the mass of the sample, the energy range, and a flag to indicate how many iterations of Bayes' equations are to be run. Some of the information given here may also be input elsewhere, in which case, values given here are ignored.

Card set 3 contains the command statements; see Section VI.A.1 for details.

Card set 4 contains particle-pair definitions, an alternative method of providing information (masses, spins and parities, charges, threshold values) for the two particles in the channel, in key-word format. This is the preferred format.

Card set 4a contains the same information as in card set 4, but in fixed format.

Card set 4.5 exists only if the command "PLOT RESOLUTION FUNCtion" is given in card set 3.

Card sets 5 and 6 describe the original input for the Doppler- and resolution-broadening functions (see Sections III B.1 and III C.1). (See also card set P4.)

Card set 7 gives the matching radius for the R-matrix formalism, sample thickness, and various other parameters. Values for many of these parameters may, however, be superseded by values specified in the PARAmeter file (Section VI.B) or elsewhere in the INPut file (card set P4).

Card set 8 specifies the type of data to be analyzed (e.g., capture cross section, transmission). When the data are angular distributions, angles are also specified here.

Card set 9 was originally used to specify the spin and parity of the nucleus in the sample. For Version M6 and subsequent versions, this card is no longer required and should be removed from INPut files. Currently, this card set will be ignored if it exists in the INPut file; however, future versions of SAMMY may *require* that this line be removed.

Card set 10 had previously been used to describe the quantum numbers for the various spin groups. For Version M6 and subsequent versions, the original format is deemed to be obsolete and is no longer supported. Users should convert their INPut files to use either the "NEW SPIN GROUP

FORMAT” (previously called “Alternative to card set 10” and now denoted “card set 10.1” in Table VIA.1) or the new “card set 10.2,” which makes use of the particle-pair definitions given in card set 4 or 4a. In either case, SAMMY provides assistance in converting the INPut files; users can simply begin a SAMMY run using the obsolete INPut file and follow the instructions on the screen.

Card set 11 is needed only when analyzing capture cross sections using self-shielding and multiple-scattering corrections, or when analyzing transmission data with a non-uniform sample. Dimensions of the sample, plus interpolation and integration parameters, are specified in this card set.

Finally, many of the parameter types that are normally given in the PARAmeter file (see Table VI B.2) may now be given in the INPut file instead. This is convenient, for example, when an evaluation involves data from many different experiments, so that the same resonance parameters but different measurement-specific parameters are needed for each data set. Caution: Parameters that are specified in the INPut file cannot be varied; any flags equal to 1 will be ignored here. The parameters can, however, be PUP’d (see Section IV.D.2 for a discussion of the Propagated Uncertainty Parameter option). Flags equal to 3 will be understood in both the INPut and the PARAmeter files. Note that each of these card sets can occur in at most one of the two files; SAMMY will abort with an error message if the same card set is found in both files.