VII.B. OUTPUT TO BE USED AS INPUT

Two output files (the "PAR" and the "COV" files) are intended to be used as input to another SAMMY run. The PAR file is as described in Section VI.B, with the "Last A" alternative chosen for the "last" card set of Table VI B.2.

In very early versions of SAMMY, the output "binary COVariance file" contained only the new (updated) covariance matrix for physical parameters (i.e., **not** for the *u*-parameters; see Section IV.C). Output parameter values were stored in the output PARameter file. When these two files were used as input to another run, the covariance matrix for the *u*-parameters was generated from Eq. (IV C.1).

Two drawbacks to this scheme led to expansion of the COV file. First, unnecessary computer time was spent in making the conversion back to *u*-parameters. Second, and more important, was the loss of precision between runs. In converting from *u*-parameters to physical parameters, storing these in ASCII format, reading them back in for the next run, and converting back to *u*-parameters, often the last several significant digits were lost. One would expect that analysis of two energy regions, first in two separate executions of SAMMY, then in one execution but still analyzing the two regions sequentially, should give identical results. With the early storage scheme, small differences occurred; with the current scheme, no discrepancies are found.

SAMMY users should keep in mind the following:

If a COVariance file is specified, SAMMY will use parameter values given in the (binary) COVariance file rather than those given in the PARameter file.

That is, all parameter values are taken from the values stored in the binary COVariance file; these values are more precise than those in the PARameter file. (See, however, the end of this section for exceptions to this rule.)

Table VII B.1 shows which variables are written in what order in the COVariance file. Dotted lines separate values kept in separate records.

Occasionally a user may wish to modify the contents of the COVariance file (and associated PARameter file), in order to de-activate a measurement-related parameter (e.g., sample thickness or Doppler temperature) and activate the comparable parameter for the measurement to be analyzed next. This may be accomplished using the program SAMAMR; see Section X.C for details.