

X.K. SAMRPT: PLOT RPI RESOLUTION FUNCTION

To plot the components and the total RPI resolution function (see Section III.C.3) at a given energy, use program SAMRPT. Input to SAMRPT consists of two lines of information: The first is the name of the PARAmeter file. Alternatively, it could be the name of a file containing the RPI portion of the PARAmeter file; the header line (“RPI Resolution function”) may or may not be present. The second line contains the energy in eV, mass in atomic mass units (amu), and flight-path length in meters (m), in 3F format (separated by commas or spaces); alternatively, the same information may be given as the first line in the RPI file. (Default values for these three quantities are 150.0, 183.85, and 25.604, respectively.)

Output from a run of SAMRPT consists of one ASCII file, SAMMY.RPI, which gives derived quantities such as the time-width associated with each component of the resolution function, as many as four plot (ODF) files, four “generic” (PLT) binary files, and four additional ASCII files:

SAM_RPI.ODF - S1 = energy, S2 = (total) resolution function, S3 = time
 SAM_RPI_BURST.ODF - S1 = time, S2 = burst-width component
 SAM_RPI_TDXXX.ODF - S1 = time, S2 = target-plus-detector component
 SAM_RPI_CHANN.ODF - S1 = time, S2 = channel-width component

The four binary files have similar names with extension “ODF” replaced by extension “PLT”. The four ASCII files have extension “ODF” replaced by “LST”. Information from the various sections of the ODF files is given in the corresponding columns of the LST files and in the binary PLT files.¹

Test case tr053 gives numerous examples (not all of which make physical sense!) for the use of this program.

¹ Prior to version 7.1.5 of the SAMMY code, the “PLT” extension was used to denote the ASCII files produced by program SAMRPT. The change from “PLT” to “LST” for the ASCII files and the addition of “PLT” binary files were made to conform with usage elsewhere in the SAMMY code. (See, for example, Section VII.C.)