Function GET_MW – single-thread version, no external ζ-function array (solar abundances are assumed), no Saha equation is used (electron and neutral concentrations are specified):

res = call_external(libname, 'GET_MW', Ndat, Parms, T_arr, DEM_arr, DDM_arr, RL)

1. Ndat = [Nz, Nf, NT, Nparms] – array of dimensions (4-element long integer):
    a. Nz – number of voxels along LOS;
    b. Nf – number of frequencies in the spectrum;
    c. NT – number of temperatures in the T_arr array; must be ≥2 – otherwise DEM/DEM are ignored;
    d. Nparms – number of parameters used to describe each voxel *(currently 15)*.
2. Parms – array of parameters, Nparms×Nz, double (see below).
3. T_arr – array of temperatures where DEM/DDM are specified, NT elements, double, in K (the temperature grid is assumed to be the same in all voxels).
4. DEM_arr – array of DEM, NT×Nz, double, in cm^{-6} K^{-1}.
5. DDM_arr – array of DDM, NT×Nz, double, in cm^{-3} K^{-1}.
6. RL – input/output array, 7×Nf, double:
    a. first row (RL[0, *]) – emission frequencies, in GHz;
    b. other rows – emission intensities, in sfu.

Array of parameters Parms (for a single voxel):

0. Parms[0] = S – visible source area, in cm^2 (only the value for first voxel is used).
1. Parms[1] = Δz – voxel length, in cm.
2. Parms[2] = T_0 – plasma temperature, in K (is used if DEM/DDM are not specified).
3. Parms[3] = n_e – electron concentration, in cm^{-3} (is used if DEM/DDM are not specified).
4. Parms[4] = B – magnetic field strength, in G.
5. Parms[5] = θ – viewing angle, in degrees.
6. Parms[6] = ψ – magnetic field azimuthal angle, in degrees.
7. Parms[7] = f_0 – starting frequency of the spectrum, in Hz:
    a. is used, only if > 0;
    b. if ≤ 0, the frequencies are taken from the RL[0, *] array.
8. Parms[8] = Δ – logarithmic frequency step (is used only if $f_0 > 0$).
9. Parms[9] – emission mechanism flag (rounded to the nearest integer):
    a. 0: all emission mechanisms (gyroresonance + free-free + contribution of neutrals) are included;
    b. 1: gyroresonance is off;
    c. 2: free-free is off;
    d. 4: contribution of neutrals is off.

    Several flags can be combined by usual or bitwise summation: e.g., Parms[9] = 2 + 4 turns off both free-free and contribution of neutrals, etc.
10. Parms[10] = s_{max} – maximum cyclotron harmonic number.
11. Parms[11] = n_H – neutral hydrogen concentration, in cm^{-3}.
12. Parms[12] = n_{He} – neutral helium concentration, in cm^{-3}.
13. Parms[13] – DEM/DDM on/off key:
    a. 0: DEM/DDM are used (provided that NT ≥ 2);
    b. ≠ 0: DEM/DDM in this voxel are ignored even if they are specified; T_0 and n_e are used instead.
14. Parms[14] – element abundance model:
    a. 0: coronal *(it is also used if Parms[14] < 0 or >2)*;
    b. 1: photospheric (Caffau);
    c. 2: photospheric (Scott).