For CO2

Download LM.zip from the HITRAN webpage (Supplemental) and unpack

in the code (version 2016) you have to save the quantum numbers and
write them out as a linelist file.

The dependency of the Y Factor on temperature is not calculated.
I assumed, most of the linemixing occurs near the ground, where the temperature
of 296 is a good enough approximation.

in subroutine calcW
after line 1357

```
         if (isot(iBand).eq.10) then
            iso = 0
         else
          iso = isot(iBand)
         end if
         write(101,'(1X,I1,A1,A60,3(f9.3))') 2, Iso,
     &        sig(iR,iBand), sum0, 0.0d0,0.0d0
```

comile
gfortran LM_calc_CO2_2017.for
and run
a.out

the LM linelist is in fort.101.

Next, match the linemixing parameters to the wavenumber in the HITRAN file, the
matching to the
quantum number does not work. The format of the linemixing file is

```
 20       0 1 1 01       0 0 0 01                    P 68e      -.111       0.00
0.00
```

The result copy in the linelist folder e.g.
as 002_CO2.hit16_LM1ST.par