

Problem of the Month:

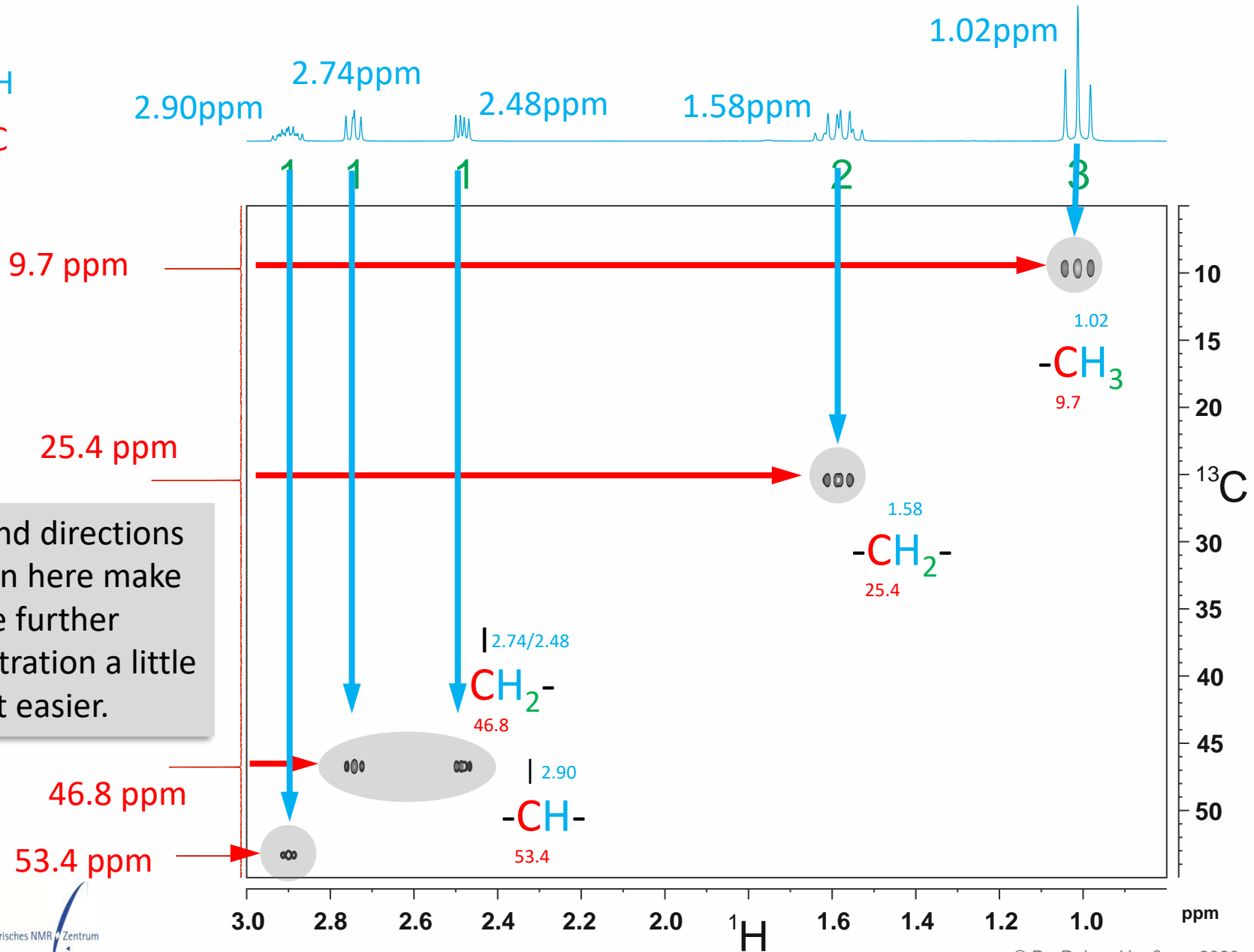
March 2020

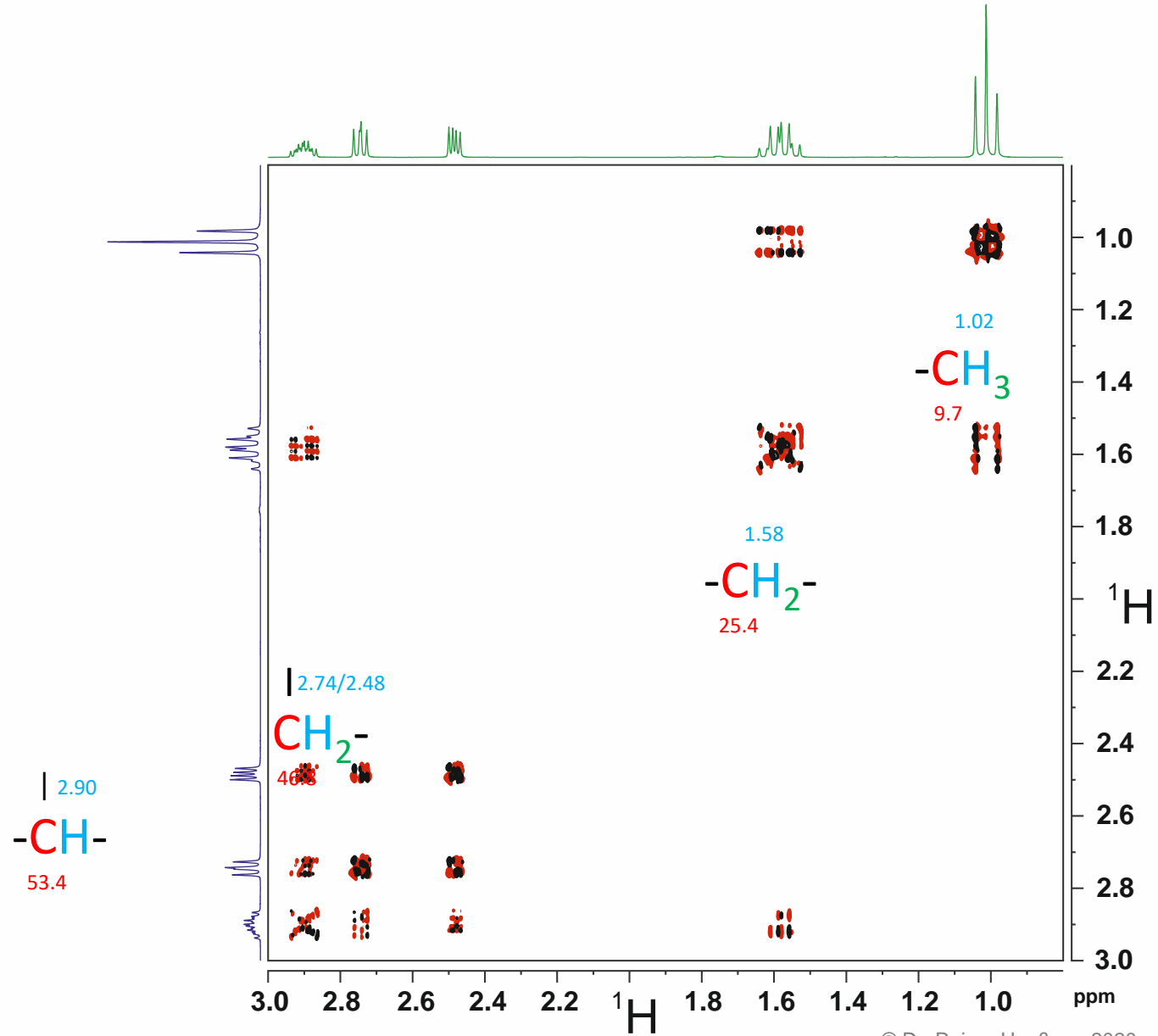
Solution

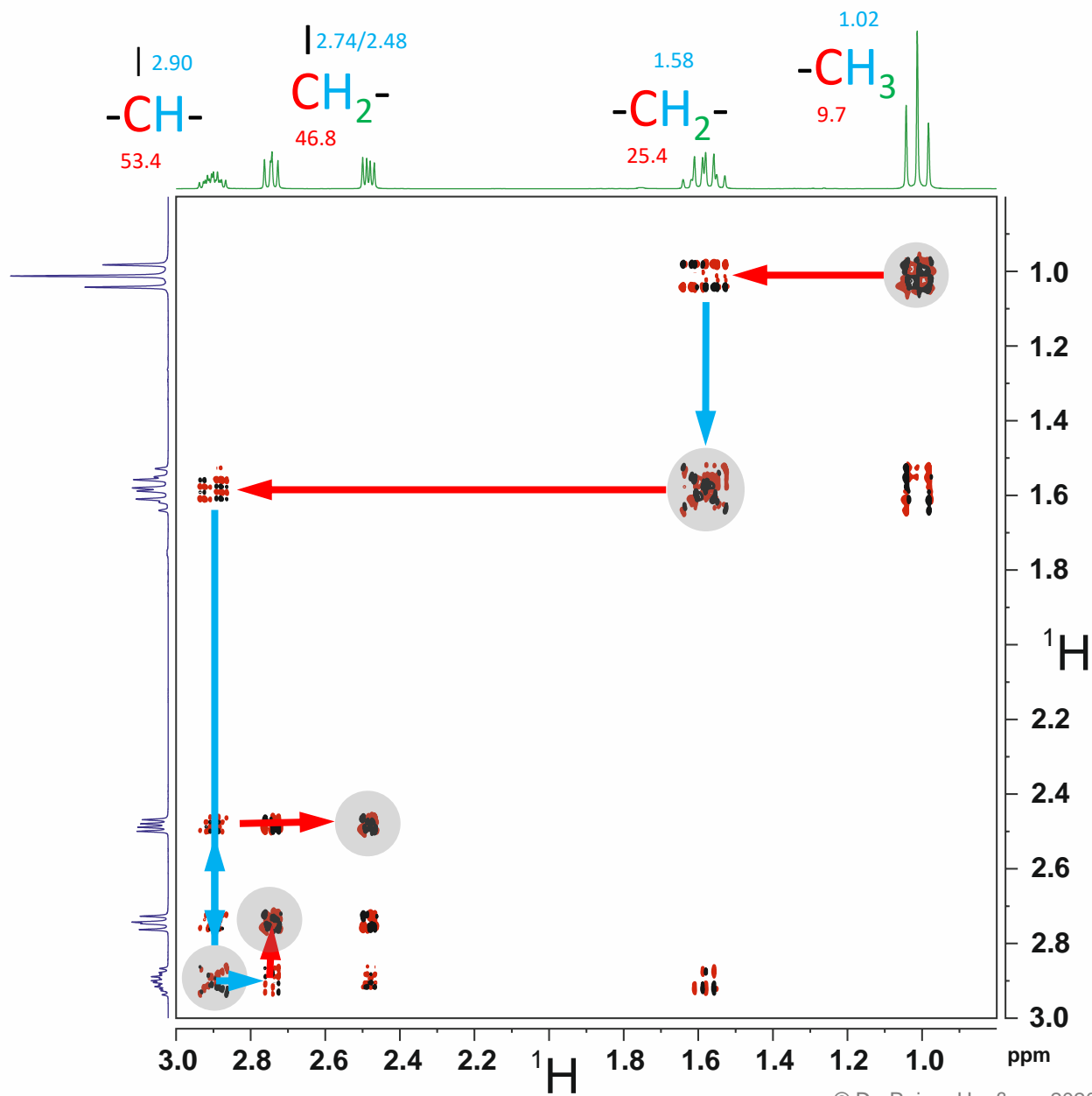
Steps

- (1) Integrate the proton spectrum.
- (2) Transfer the integral values to the proton projection of the HSQC
- (3) Get the building blocks from the HSQC cross peaks

from ^1H
from ^{13}C







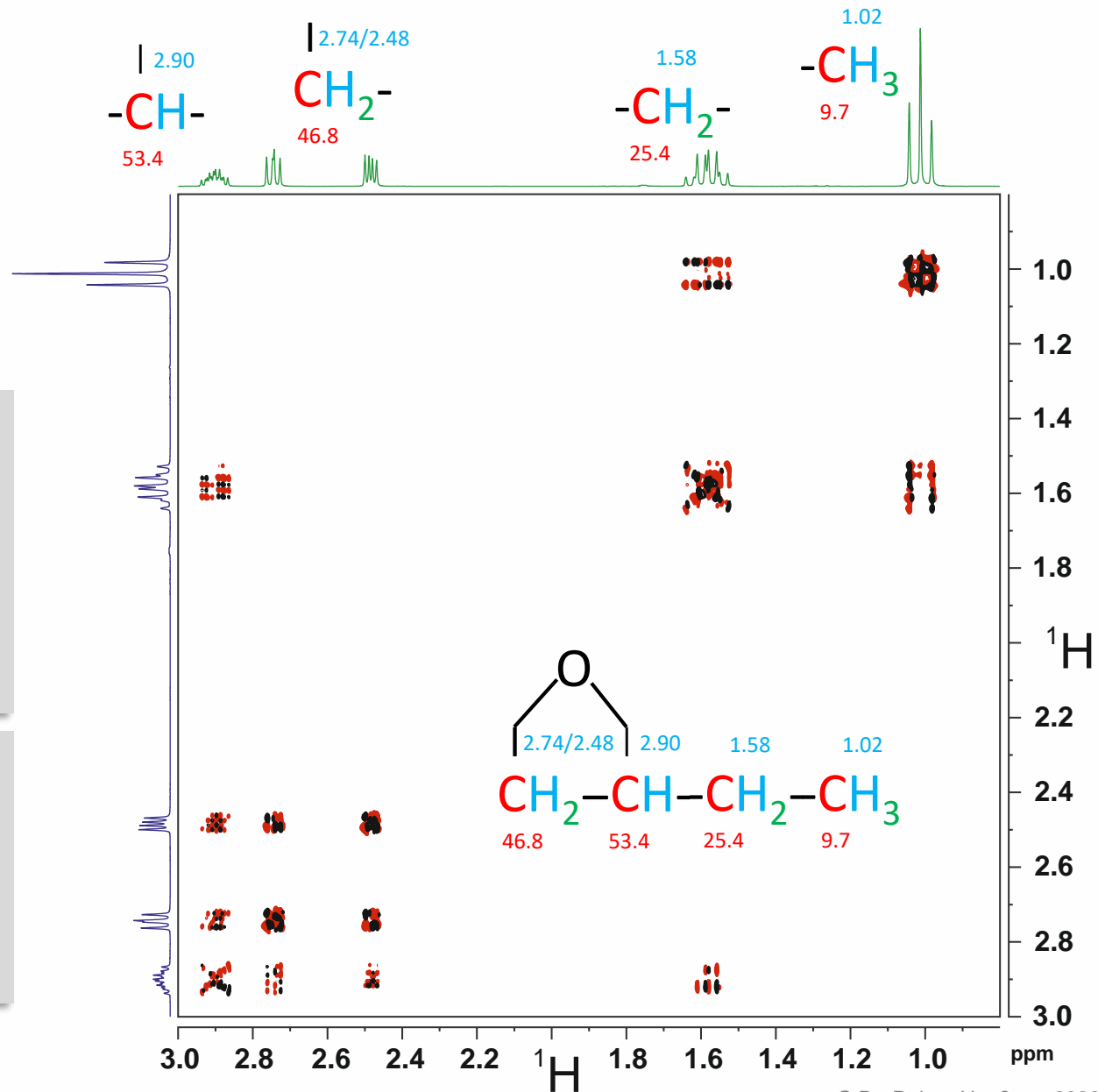
Whats missing?

According to the molecular formula

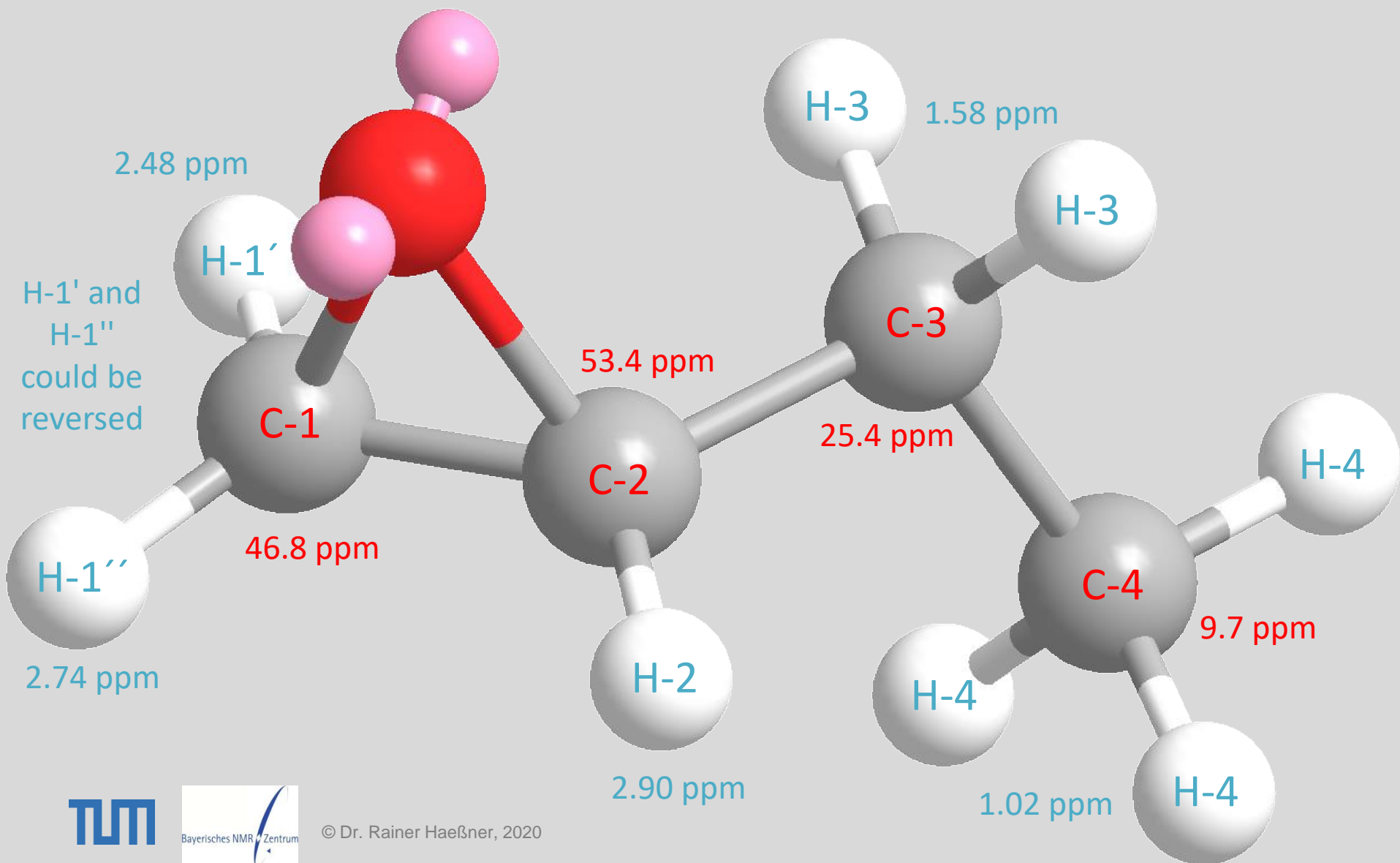
- one double bond equivalent
- one oxygen atom

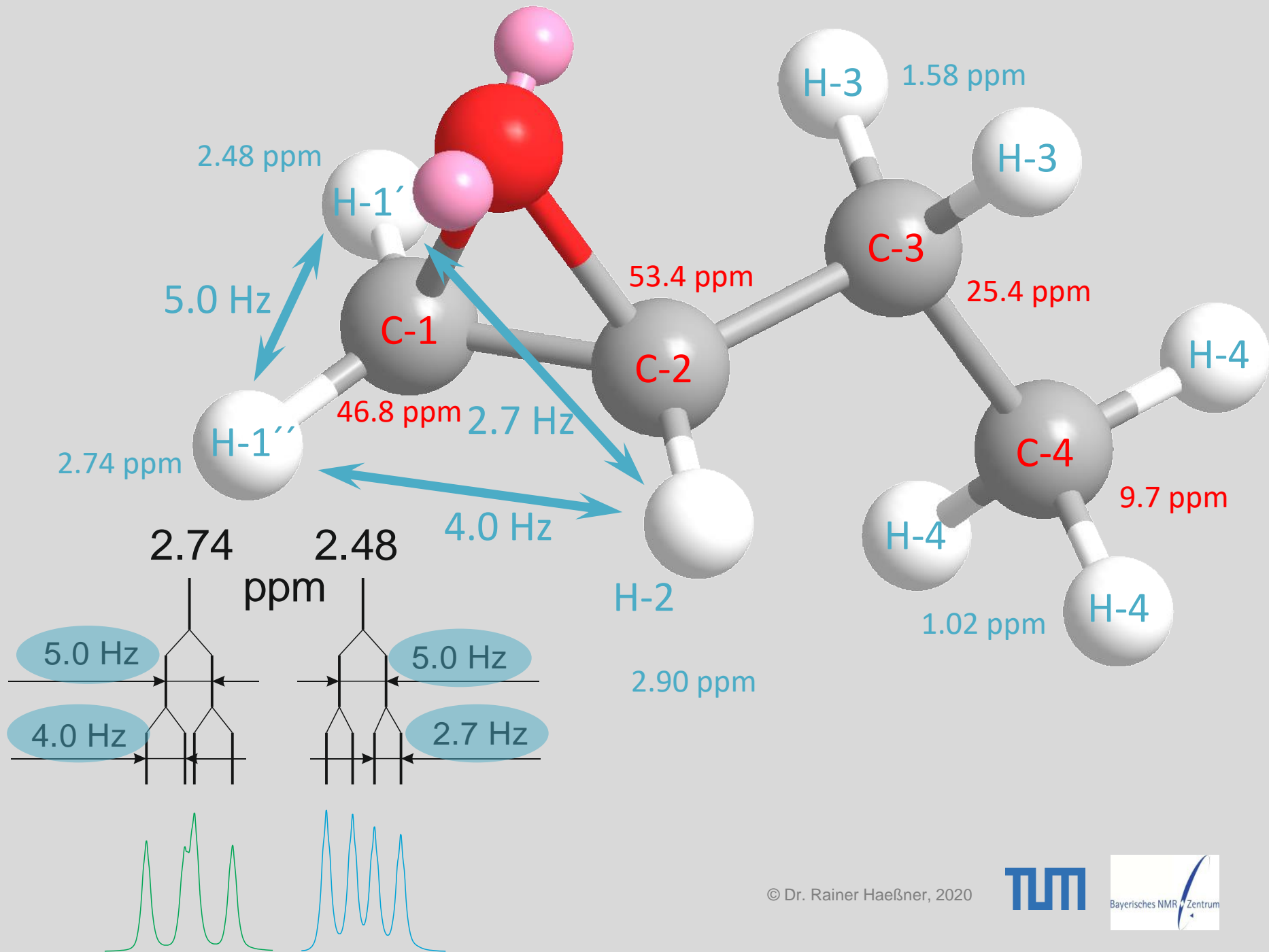
But ...

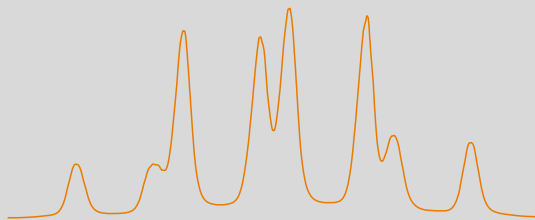
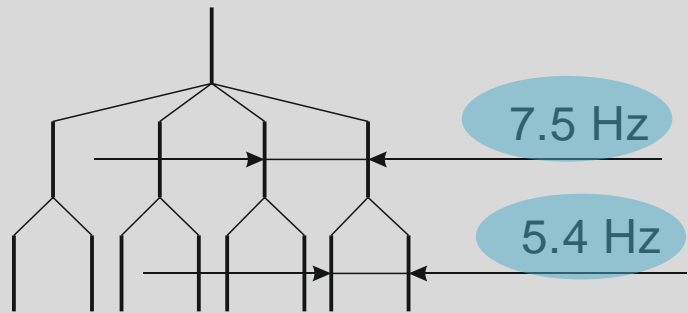
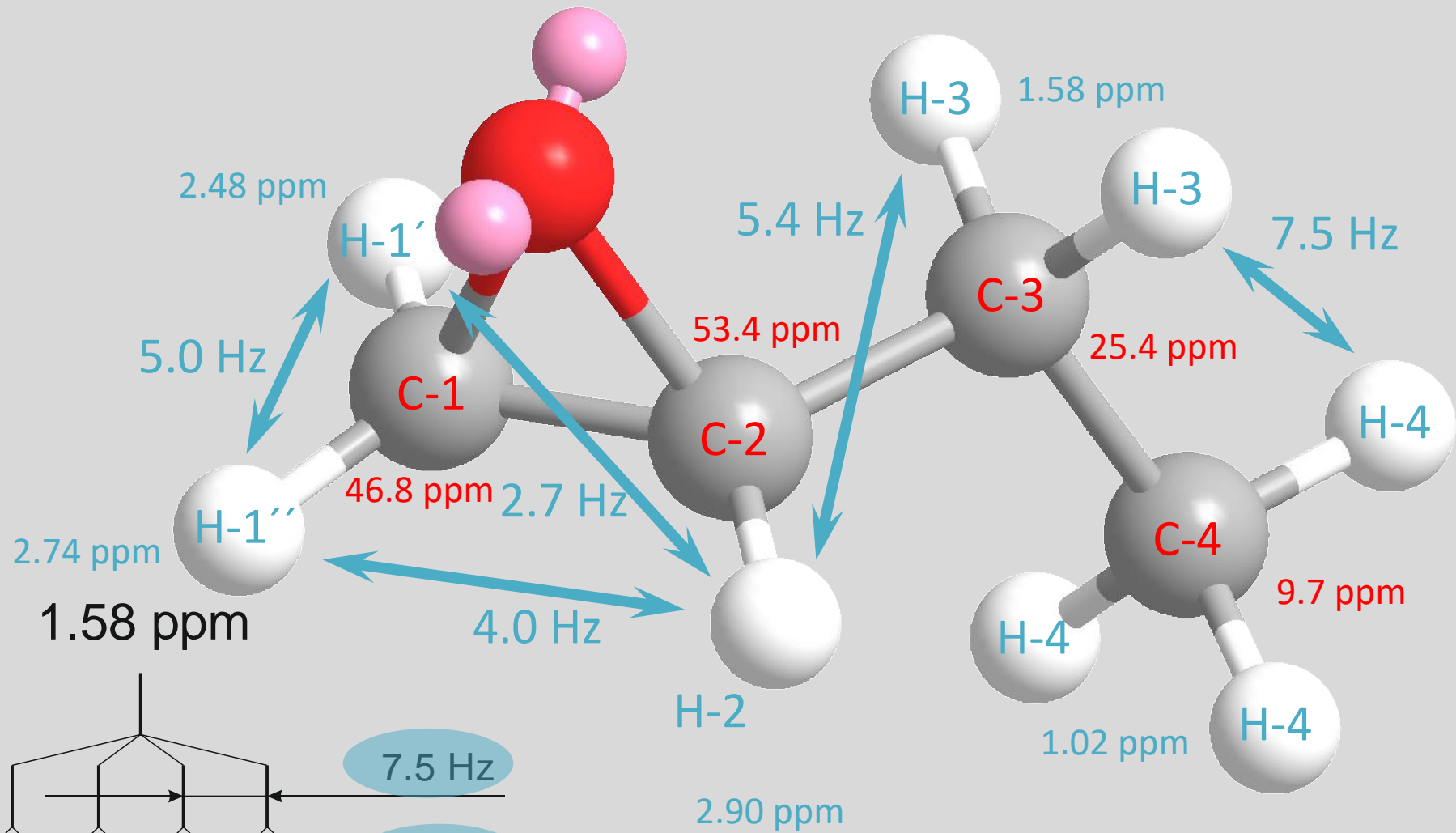
... whats the reason for the different proton signals next to the first carbon?

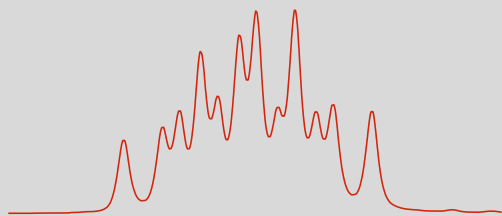
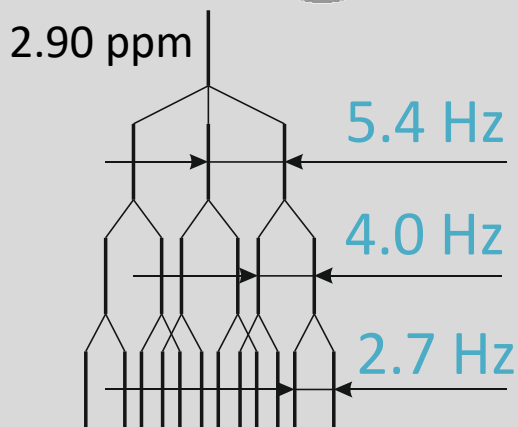
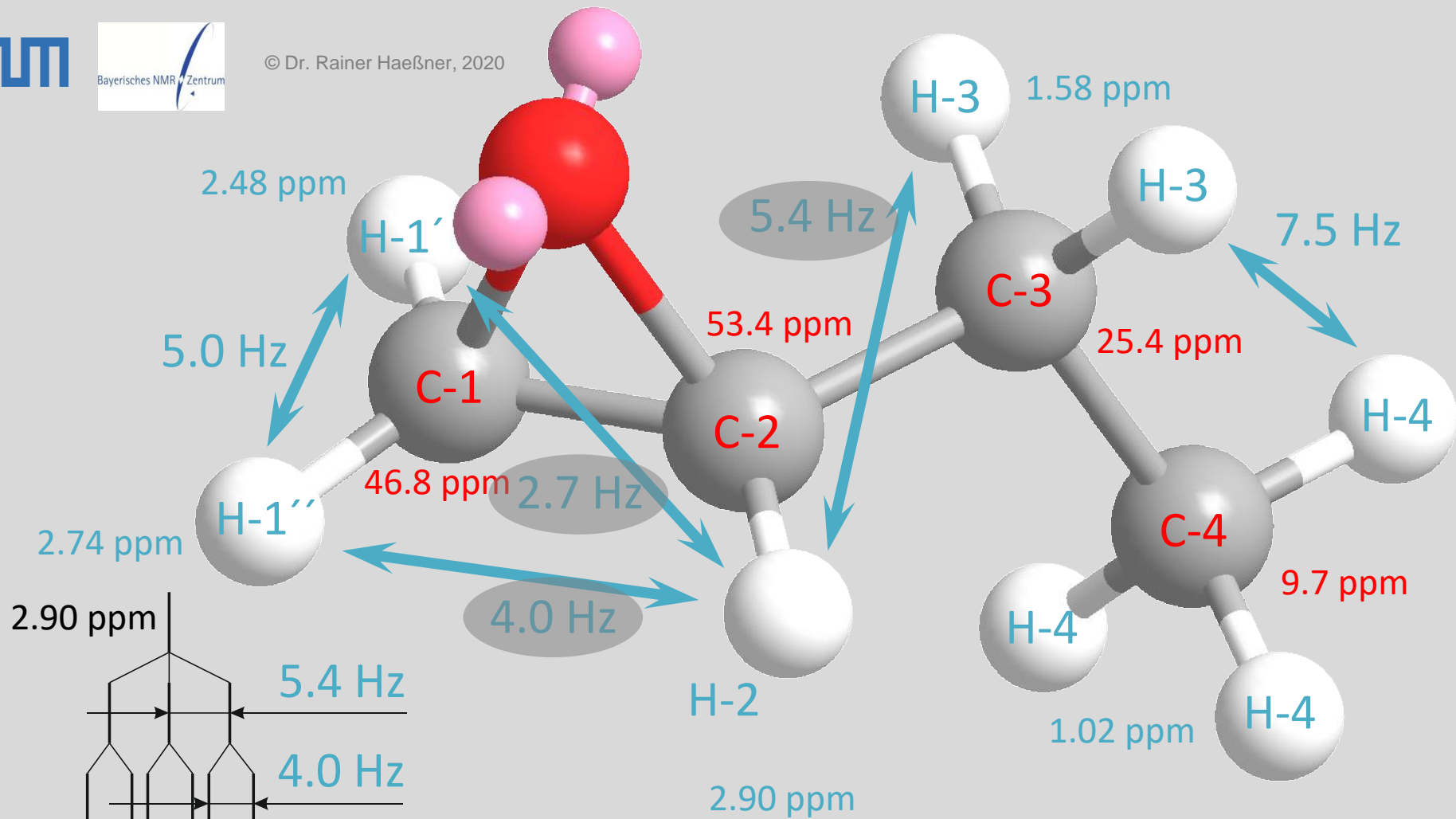


The chemical environment of H-1' and H-1'' is clearly different. A free rotation around the bond between C-1 and C-2 is not possible.









One final remark

- the two protons labelled with H-3 are **not** equivalent!
- for the moment let's neglect this fact