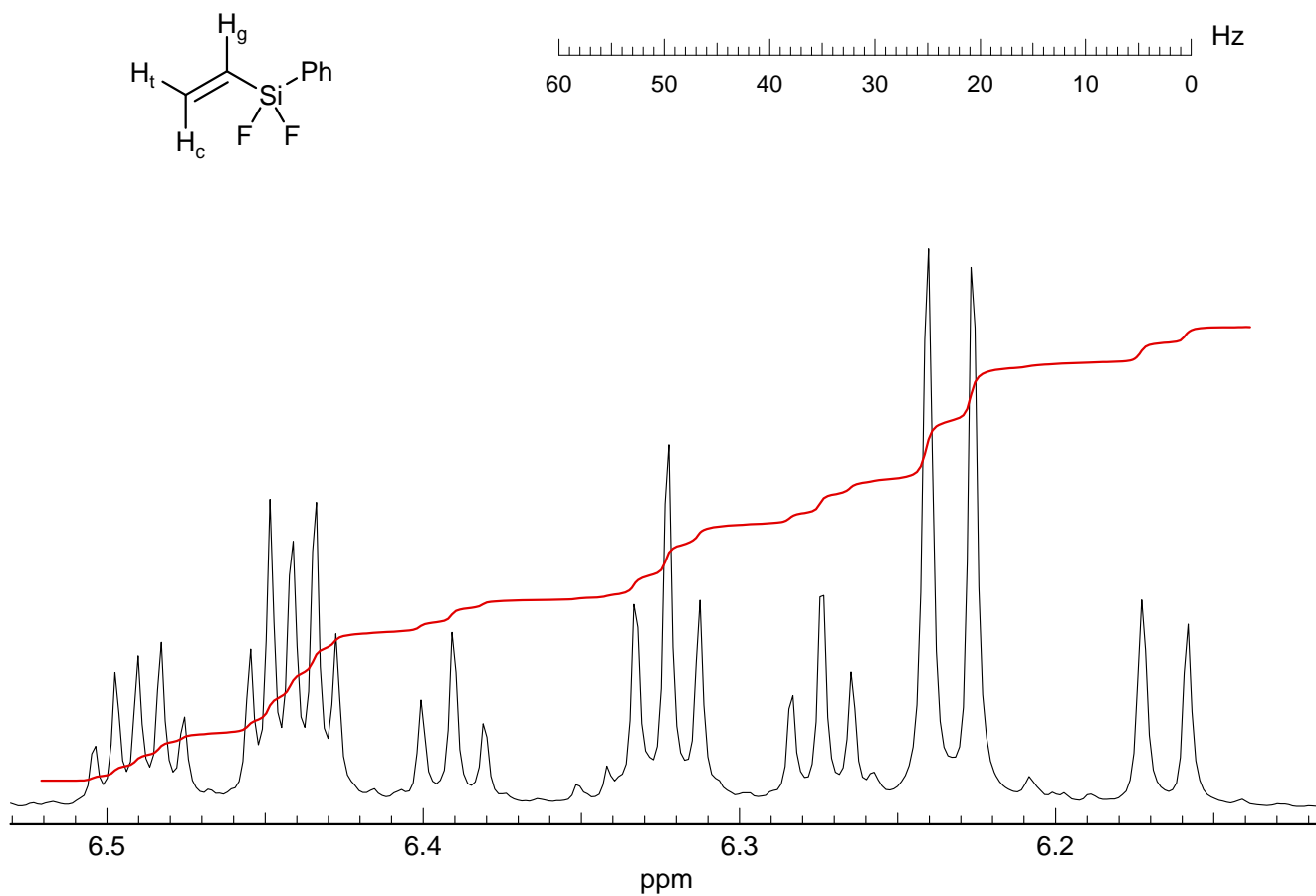
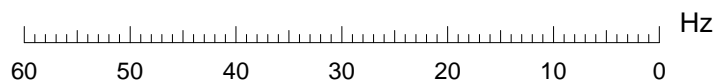
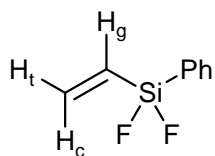


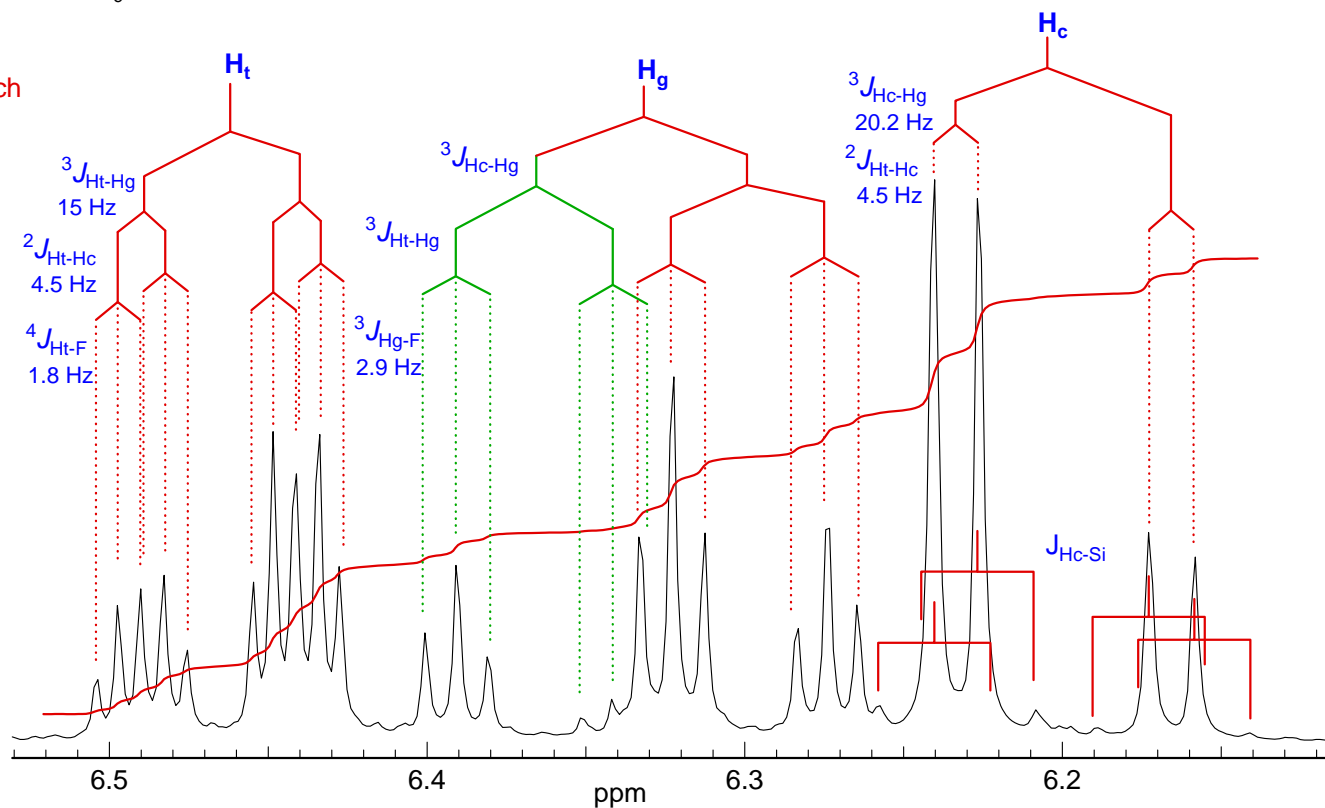
Problem R-11P ($\text{C}_8\text{H}_8\text{F}_2\text{Si}$). Below is the partial 300 MHz ^1H NMR spectrum of vinyl difluorophenylsilane in acetone- d_6 (courtesy of Josh Dykstra). Analyze the spectrum, and label the spectrum with coupling trees, and identify H_g , H_c and H_t . Report all coupling in the standard format ($^nJ_{\text{X-Y}} = 00.0 \text{ Hz}$). Apart from intensities, the spectrum is basically first order.



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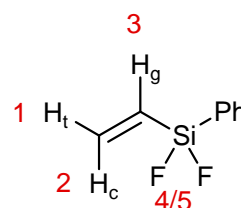
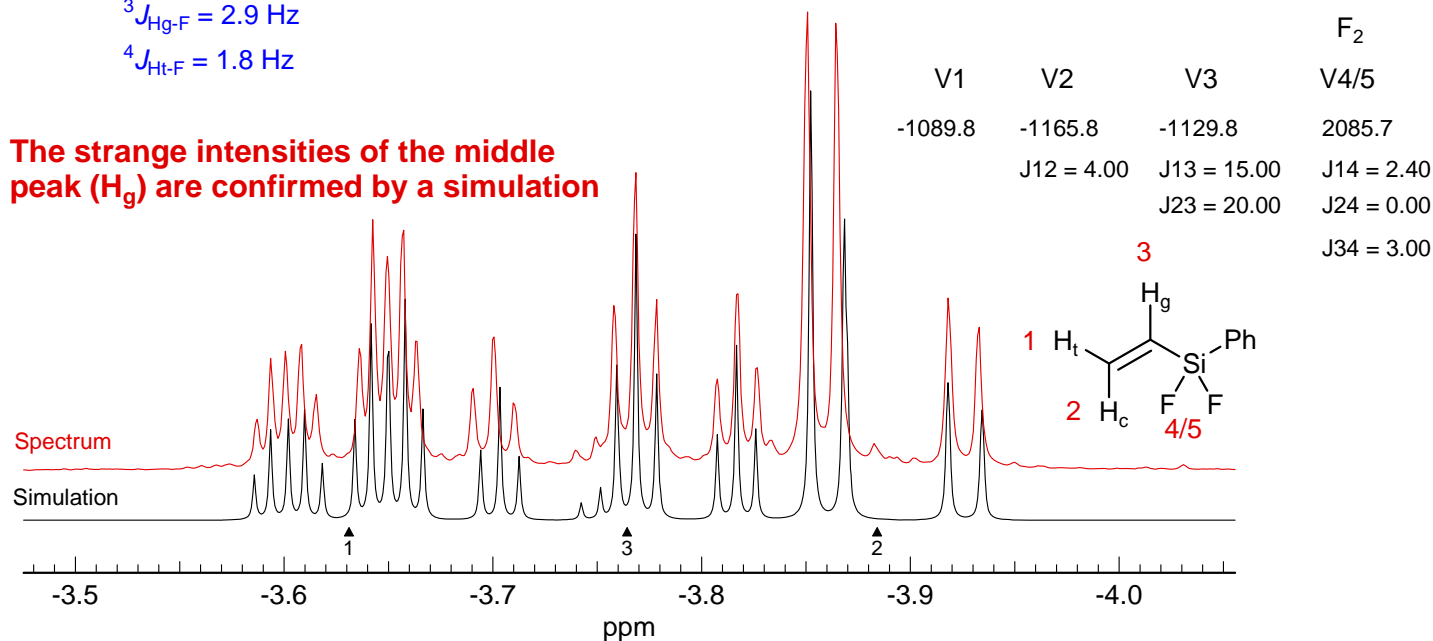
5 pts each



$$\begin{aligned} {}^2J_{\text{Ht-Hc}} &= 4.5 \text{ Hz} \\ {}^3J_{\text{Ht-Hg}} &= 20.2 \text{ Hz} \\ {}^3J_{\text{Hg-F}} &= 2.9 \text{ Hz} \\ {}^4J_{\text{Ht-F}} &= 1.8 \text{ Hz} \end{aligned}$$

There are also a number of small peaks from ^{29}Si coupling to the various protons. Pretty indistinct - hard to be sure which might be impurities because usually can't see both satellites. One likely set of ^{29}Si satellites is shown for H_c .

The strange intensities of the middle peak (H_g) are confirmed by a simulation



Spectrum

Simulation

-3.5

-3.6

-3.7

-3.8

-3.9

-4.0

ppm