

Figure 1: Fractional change between Amadeo supplied values and my implementation. ($|y_{you} - y_{me}|/y_{you}$)

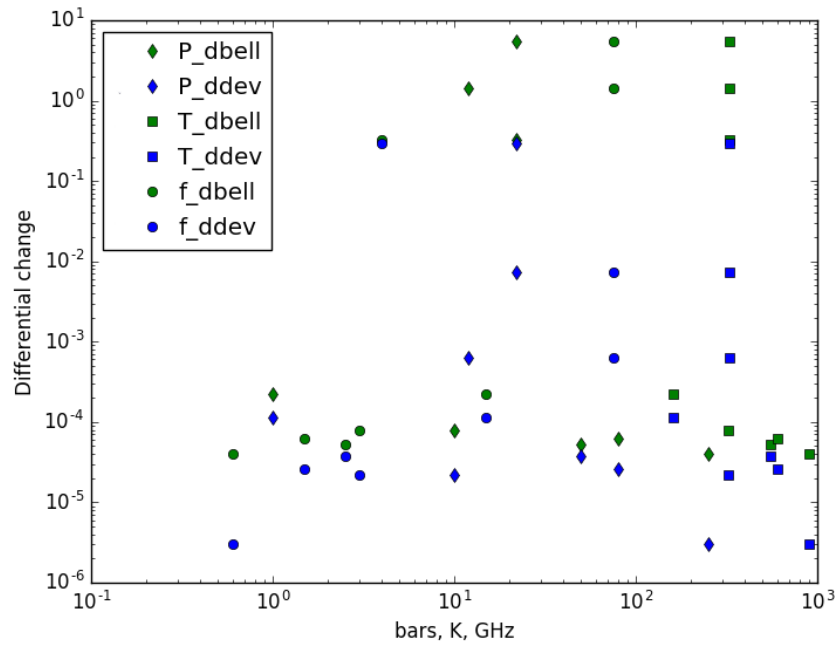


Figure 2: Difference between Amadeo supplied values and my implementation. ($|y_{you} - y_{me}|$)

Table 1: Values supplied by Amadeo/my implementation of them. Bold ones are the ones that show significant differences.

F(GHz)	P(bars)	T(K)	NH3	H2	He	Bellotti NH3 (dB/km)	Devaraj NH3 (dB/km)
15	1	160	2E-4	0.87	0.13	0.6873/0.6875	0.7399/0.7400
3	10	325	2E-4	0.87	0.13	0.1150/0.1151	0.1136/0.1136
2.5	50	550	2E-4	0.87	0.13	0.1922/0.1922	0.1902/0.1902
1.5	80	600	2E-4	0.87	0.13	0.0802/0.0803	0.0813/0.0813
75	22	330	2E-4	0.87	0.13	16.2537/10.7199	16.7760/16.7686
75	12	330	2E-4	0.87	0.13	5.1798/3.7548	3.7556/3.7562
4	22	330	2E-4	0.87	0.13	0.2562/0.5810	0.2645/0.5561
0.6	250	900	2E-4	0.87	0.13	0.0111/0.0111	0.0125/0.01250
4	12	330	2E-4	0.87	0.13	0.2562/0.2645	0.2645/0.2562

These are complicated figures where I plot all parameters (P, T, mixing ratio) as different symbols with Bellotti comparisons as green and Devaraj comparisons as blue. The bold entries highlight the ones that are different. Looking at the row for 4 GHz, 22 bars, 330 K, if I change the pressure to 12 bars it matches very well (and perfectly if I swap Bellotti/Devaraj) – see the entry added to the bottom. Maybe this was a transcription error?

The only other ones are for high frequencies, so maybe I have the values “above” the frequency switch at 30 GHz wrong. Here are my values:

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if freq<=30.0:
    gnu_H2=1.6937;      gnu_He=0.6997;      gnu_NH3=0.7523;
    GAMMA_H2=0.8085;    GAMMA_He=1.0;      GAMMA_NH3=1.0;
    zeta_H2=1.3263;     zeta_He=0.1607;     zeta_NH3=0.6162;
    Z_H2=0.8199;        Z_He=-0.7269;      Z_NH3=1.3832;
    d=-0.0139;
    Con=0.9619;
else:
    gnu_H2=1.7465;      gnu_He=0.9779;      gnu_NH3=0.7298;
    GAMMA_H2=0.8202;    GAMMA_He=1.0;      GAMMA_NH3=1.0;
    zeta_H2=1.2163;     zeta_He=0.0291;     zeta_NH3=0.5152;
    Z_H2=0.8873;        Z_He=0.8994;      Z_NH3=2.0/3.0;
    d=-0.0627;
    Con=0.9862;

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