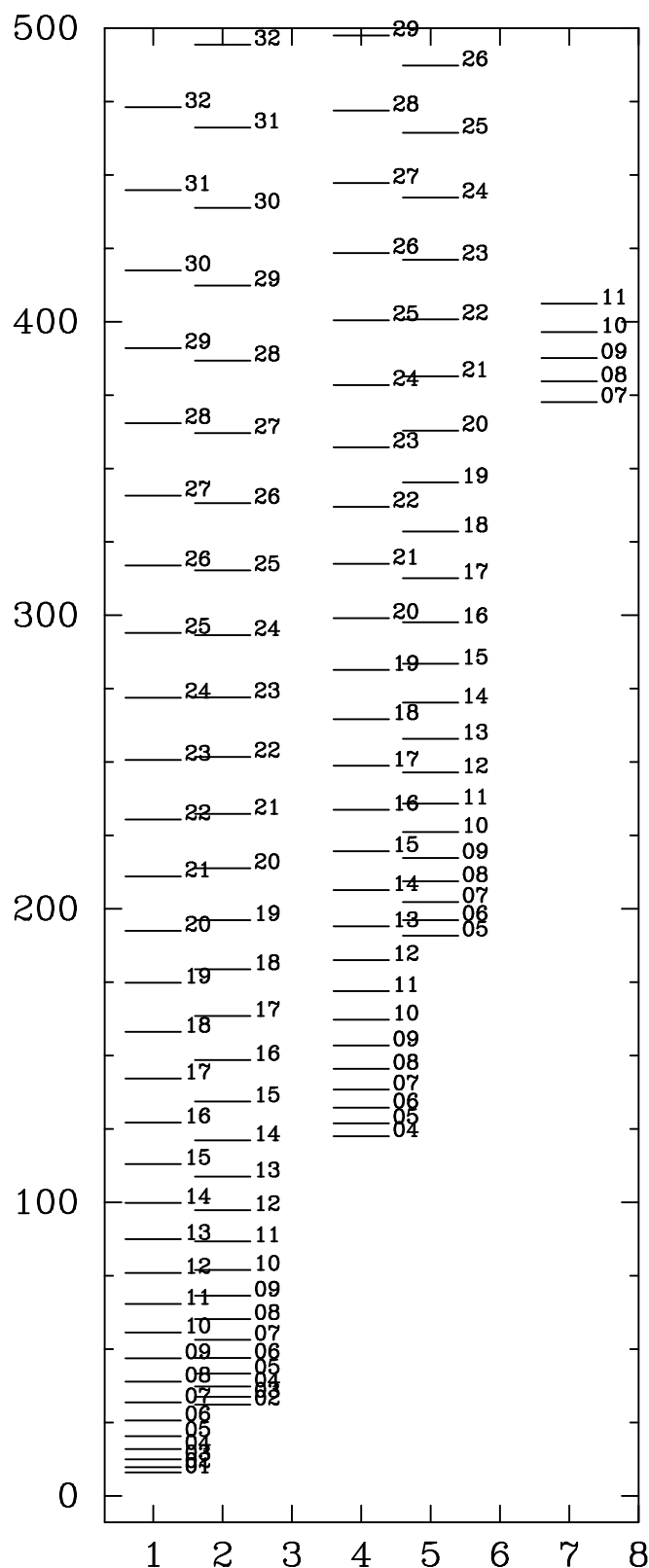


# para-CH<sub>3</sub>CN

B0: 9.19890 GHz C0: 1.5730E+02 GHz Dipole Mom: 3.913 Debye  
 DJ: 3.80E-06 GHz DK: 2.84E-03 GHz DJK: 1.77E-04 GHz



K-Ladders

| Quantum Numbers |    |    | Level Degeneracy | Energy Above Ground (Kelvins) |
|-----------------|----|----|------------------|-------------------------------|
| J               | K  | K1 |                  |                               |
| 01              | 01 |    | 6.               | 7.99                          |
| 02              | 01 |    | 10.              | 9.76                          |
| 03              | 01 |    | 14.              | 12.41                         |
| 04              | 01 |    | 18.              | 15.94                         |
| 05              | 01 |    | 22.              | 20.35                         |
| 06              | 01 |    | 26.              | 25.65                         |
| 07              | 01 |    | 30.              | 31.83                         |
| 08              | 01 |    | 34.              | 38.89                         |
| 09              | 01 |    | 38.              | 46.84                         |
| 10              | 01 |    | 42.              | 55.67                         |
| 11              | 01 |    | 46.              | 65.38                         |
| 12              | 01 |    | 50.              | 75.97                         |
| 13              | 01 |    | 54.              | 87.45                         |
| 14              | 01 |    | 58.              | 99.81                         |
| 15              | 01 |    | 62.              | 113.05                        |
| 16              | 01 |    | 66.              | 127.17                        |
| 17              | 01 |    | 70.              | 142.18                        |
| 18              | 01 |    | 74.              | 158.07                        |
| 19              | 01 |    | 78.              | 174.84                        |
| 20              | 01 |    | 82.              | 192.49                        |

| QN(up) |    |    | QN(low) |    |    | Freq (GHz) | A(U-L)   | B(L-U)   | Log(Tau) relative |
|--------|----|----|---------|----|----|------------|----------|----------|-------------------|
| J      | K  | K1 | J       | K  | K1 |            |          |          |                   |
| 02     | 01 |    | 01      | 01 |    | 36.795     | 2.66E-06 | 6.03E+18 | -0.23             |
| 03     | 01 |    | 02      | 01 |    | 55.192     | 1.14E-05 | 6.44E+18 | 0.18              |
| 04     | 01 |    | 03      | 01 |    | 73.589     | 2.95E-05 | 6.46E+18 | 0.43              |
| 05     | 01 |    | 04      | 01 |    | 91.985     | 6.04E-05 | 6.44E+18 | 0.60              |
| 06     | 01 |    | 05      | 01 |    | 110.381    | 1.07E-04 | 6.40E+18 | 0.73              |
| 07     | 01 |    | 06      | 01 |    | 128.777    | 1.74E-04 | 6.36E+18 | 0.83              |
| 08     | 01 |    | 07      | 01 |    | 147.172    | 2.63E-04 | 6.33E+18 | 0.90              |
| 09     | 01 |    | 08      | 01 |    | 165.566    | 3.78E-04 | 6.31E+18 | 0.95              |
| 10     | 01 |    | 09      | 01 |    | 183.959    | 5.22E-04 | 6.29E+18 | 0.98              |
| 11     | 01 |    | 10      | 01 |    | 202.352    | 6.99E-04 | 6.27E+18 | 1.00              |
| 12     | 01 |    | 11      | 01 |    | 220.743    | 9.12E-04 | 6.25E+18 | 1.00              |
| 13     | 01 |    | 12      | 01 |    | 239.133    | 1.16E-03 | 6.24E+18 | 0.99              |
| 14     | 01 |    | 13      | 01 |    | 257.522    | 1.46E-03 | 6.22E+18 | 0.97              |
| 15     | 01 |    | 14      | 01 |    | 275.910    | 1.80E-03 | 6.21E+18 | 0.94              |
| 16     | 01 |    | 15      | 01 |    | 294.297    | 2.19E-03 | 6.20E+18 | 0.89              |
| 17     | 01 |    | 16      | 01 |    | 312.682    | 2.63E-03 | 6.19E+18 | 0.84              |
| 18     | 01 |    | 17      | 01 |    | 331.065    | 3.13E-03 | 6.19E+18 | 0.78              |
| 19     | 01 |    | 18      | 01 |    | 349.447    | 3.69E-03 | 6.18E+18 | 0.71              |
| 20     | 01 |    | 19      | 01 |    | 367.827    | 4.31E-03 | 6.17E+18 | 0.63              |
| 21     | 01 |    | 20      | 01 |    | 386.205    | 4.99E-03 | 6.17E+18 | 0.54              |
| 22     | 01 |    | 21      | 01 |    | 404.582    | 5.75E-03 | 6.16E+18 | 0.44              |
| 23     | 01 |    | 22      | 01 |    | 422.956    | 6.58E-03 | 6.16E+18 | 0.34              |
| 24     | 01 |    | 23      | 01 |    | 441.329    | 7.48E-03 | 6.15E+18 | 0.23              |
| 25     | 01 |    | 24      | 01 |    | 459.698    | 8.46E-03 | 6.15E+18 | 0.11              |
| 26     | 01 |    | 25      | 01 |    | 478.066    | 9.52E-03 | 6.14E+18 | -0.02             |
| 27     | 01 |    | 26      | 01 |    | 496.431    | 1.07E-02 | 6.14E+18 | -0.16             |
| 28     | 01 |    | 27      | 01 |    | 514.795    | 1.19E-02 | 6.14E+18 | -0.30             |
| 29     | 01 |    | 28      | 01 |    | 533.155    | 1.32E-02 | 6.13E+18 | -0.45             |
| 30     | 01 |    | 29      | 01 |    | 551.513    | 1.47E-02 | 6.13E+18 | -0.61             |

| Quantum Numbers |    |    | Level Degeneracy | Energy Above Ground (Kelvins) | QN(up) |    |    | QN(low) |    |    | Freq (GHz) | A(U-L)   | B(L-U)   | Log(Tau relative) |
|-----------------|----|----|------------------|-------------------------------|--------|----|----|---------|----|----|------------|----------|----------|-------------------|
| J               | K  | K1 |                  |                               | J      | K  | K1 | J       | K  | K1 |            |          |          |                   |
| 21              | 01 |    | 86.              | 211.03                        | 02     | 01 |    | 01      | 01 |    | 36.795     | 2.66E-06 | 6.03E+18 | -0.23             |
| 22              | 01 |    | 90.              | 230.44                        | 03     | 02 |    | 02      | 02 |    | 55.189     | 7.12E-06 | 4.02E+18 | -0.18             |
| 23              | 01 |    | 94.              | 250.74                        | 03     | 01 |    | 02      | 01 |    | 55.192     | 1.14E-05 | 6.44E+18 | 0.18              |
| 24              | 01 |    | 98.              | 271.92                        | 04     | 02 |    | 03      | 02 |    | 73.585     | 2.36E-05 | 5.17E+18 | 0.18              |
| 25              | 01 |    | 102.             | 293.98                        | 04     | 01 |    | 03      | 01 |    | 73.589     | 2.95E-05 | 6.46E+18 | 0.43              |
| 26              | 01 |    | 106.             | 316.93                        | 05     | 04 |    | 04      | 04 |    | 91.959     | 2.26E-05 | 2.41E+18 | -0.59             |
| 27              | 01 |    | 110.             | 340.75                        | 05     | 02 |    | 04      | 02 |    | 91.980     | 5.29E-05 | 5.63E+18 | 0.39              |
| 28              | 01 |    | 114.             | 365.46                        | 05     | 01 |    | 04      | 01 |    | 91.985     | 6.04E-05 | 6.44E+18 | 0.60              |
| 29              | 01 |    | 118.             | 391.04                        | 06     | 05 |    | 05      | 05 |    | 110.330    | 3.37E-05 | 2.01E+18 | -1.00             |
| 30              | 01 |    | 122.             | 417.51                        | 06     | 04 |    | 05      | 04 |    | 110.350    | 6.13E-05 | 3.66E+18 | -0.28             |
| 31              | 01 |    | 126.             | 444.86                        | 06     | 02 |    | 05      | 02 |    | 110.375    | 9.82E-05 | 5.85E+18 | 0.54              |
| 32              | 01 |    | 130.             | 473.09                        | 06     | 01 |    | 05      | 01 |    | 110.381    | 1.07E-04 | 6.40E+18 | 0.73              |
| 02              | 02 |    | 10.              | 31.08                         | 07     | 05 |    | 06      | 05 |    | 128.717    | 8.67E-05 | 3.18E+18 | -0.71             |
| 03              | 02 |    | 14.              | 33.73                         | 07     | 04 |    | 06      | 04 |    | 128.739    | 1.19E-04 | 4.38E+18 | -0.11             |
| 04              | 02 |    | 18.              | 37.26                         | 07     | 02 |    | 06      | 02 |    | 128.769    | 1.63E-04 | 5.97E+18 | 0.65              |
| 05              | 02 |    | 22.              | 41.67                         | 07     | 01 |    | 06      | 01 |    | 128.777    | 1.74E-04 | 6.36E+18 | 0.83              |
| 06              | 02 |    | 26.              | 46.97                         | 08     | 07 |    | 07      | 07 |    | 147.035    | 6.24E-05 | 1.51E+18 | -2.19             |
| 07              | 02 |    | 30.              | 53.15                         | 08     | 05 |    | 07      | 05 |    | 147.104    | 1.62E-04 | 3.92E+18 | -0.54             |
| 08              | 02 |    | 34.              | 60.21                         | 08     | 04 |    | 07      | 04 |    | 147.129    | 2.00E-04 | 4.83E+18 | 0.01              |
| 09              | 02 |    | 38.              | 68.16                         | 08     | 02 |    | 07      | 02 |    | 147.163    | 2.50E-04 | 6.03E+18 | 0.72              |
| 10              | 02 |    | 42.              | 76.98                         | 08     | 01 |    | 07      | 01 |    | 147.172    | 2.63E-04 | 6.33E+18 | 0.90              |
| 11              | 02 |    | 46.              | 86.70                         | 09     | 07 |    | 08      | 07 |    | 165.413    | 1.51E-04 | 2.52E+18 | -1.92             |
| 12              | 02 |    | 50.              | 97.29                         | 09     | 05 |    | 08      | 05 |    | 165.489    | 2.64E-04 | 4.42E+18 | -0.44             |
| 13              | 02 |    | 54.              | 108.76                        | 09     | 04 |    | 08      | 04 |    | 165.518    | 3.07E-04 | 5.13E+18 | 0.09              |
| 14              | 02 |    | 58.              | 121.12                        | 09     | 02 |    | 08      | 02 |    | 165.557    | 3.64E-04 | 6.07E+18 | 0.78              |
| 15              | 02 |    | 62.              | 134.36                        | 09     | 01 |    | 08      | 01 |    | 165.566    | 3.78E-04 | 6.31E+18 | 0.95              |
| 16              | 02 |    | 66.              | 148.49                        | 10     | 07 |    | 09      | 07 |    | 183.790    | 2.68E-04 | 3.24E+18 | -1.77             |
| 17              | 02 |    | 70.              | 163.49                        | 10     | 05 |    | 09      | 05 |    | 183.874    | 3.95E-04 | 4.76E+18 | -0.37             |
| 18              | 02 |    | 74.              | 179.38                        | 10     | 04 |    | 09      | 04 |    | 183.906    | 4.43E-04 | 5.33E+18 | 0.14              |
| 19              | 02 |    | 78.              | 196.15                        | 10     | 02 |    | 09      | 02 |    | 183.949    | 5.06E-04 | 6.10E+18 | 0.81              |
| 20              | 02 |    | 82.              | 213.80                        | 10     | 01 |    | 09      | 01 |    | 183.959    | 5.22E-04 | 6.29E+18 | 0.98              |
| 21              | 02 |    | 86.              | 232.33                        | 11     | 07 |    | 10      | 07 |    | 202.164    | 4.18E-04 | 3.76E+18 | -1.69             |
| 22              | 02 |    | 90.              | 251.75                        | 11     | 05 |    | 10      | 05 |    | 202.257    | 5.59E-04 | 5.01E+18 | -0.33             |
| 23              | 02 |    | 94.              | 272.05                        | 11     | 04 |    | 10      | 04 |    | 202.293    | 6.11E-04 | 5.48E+18 | 0.17              |
| 24              | 02 |    | 98.              | 293.23                        | 11     | 02 |    | 10      | 02 |    | 202.340    | 6.82E-04 | 6.11E+18 | 0.83              |
| 25              | 02 |    | 102.             | 315.29                        | 11     | 01 |    | 10      | 01 |    | 202.352    | 6.99E-04 | 6.27E+18 | 1.00              |
| 26              | 02 |    | 106.             | 338.23                        | 12     | 05 |    | 11      | 05 |    | 220.641    | 7.58E-04 | 5.20E+18 | -0.31             |
| 27              | 02 |    | 110.             | 362.05                        | 12     | 04 |    | 11      | 04 |    | 220.679    | 8.16E-04 | 5.60E+18 | 0.18              |
| 28              | 02 |    | 114.             | 386.76                        | 12     | 02 |    | 11      | 02 |    | 220.730    | 8.93E-04 | 6.12E+18 | 0.84              |
| 29              | 02 |    | 118.             | 412.34                        | 12     | 01 |    | 11      | 01 |    | 220.743    | 9.12E-04 | 6.25E+18 | 1.00              |
| 30              | 02 |    | 122.             | 438.81                        | 13     | 05 |    | 12      | 05 |    | 239.023    | 9.97E-04 | 5.35E+18 | -0.31             |
| 31              | 02 |    | 126.             | 466.16                        | 13     | 04 |    | 12      | 04 |    | 239.064    | 1.06E-03 | 5.68E+18 | 0.18              |
| 32              | 02 |    | 130.             | 494.39                        | 13     | 02 |    | 12      | 02 |    | 239.120    | 1.14E-03 | 6.13E+18 | 0.83              |
| 04              | 04 |    | 18.              | 122.51                        | 13     | 01 |    | 12      | 01 |    | 239.133    | 1.16E-03 | 6.24E+18 | 0.99              |
| 05              | 04 |    | 22.              | 126.93                        | 14     | 05 |    | 13      | 05 |    | 257.403    | 1.28E-03 | 5.46E+18 | -0.32             |
| 06              | 04 |    | 26.              | 132.22                        | 14     | 04 |    | 13      | 04 |    | 257.448    | 1.35E-03 | 5.75E+18 | 0.16              |
| 07              | 04 |    | 30.              | 138.40                        | 14     | 02 |    | 13      | 02 |    | 257.508    | 1.44E-03 | 6.13E+18 | 0.81              |
| 08              | 04 |    | 34.              | 145.46                        | 14     | 01 |    | 13      | 01 |    | 257.522    | 1.46E-03 | 6.22E+18 | 0.97              |
| 09              | 04 |    | 38.              | 153.41                        | 15     | 05 |    | 14      | 05 |    | 275.783    | 1.61E-03 | 5.55E+18 | -0.35             |
| 10              | 04 |    | 42.              | 162.23                        | 15     | 04 |    | 14      | 04 |    | 275.831    | 1.68E-03 | 5.80E+18 | 0.13              |
| 11              | 04 |    | 46.              | 171.94                        | 15     | 02 |    | 14      | 02 |    | 275.894    | 1.78E-03 | 6.13E+18 | 0.78              |
| 12              | 04 |    | 50.              | 182.53                        | 15     | 01 |    | 14      | 01 |    | 275.910    | 1.80E-03 | 6.21E+18 | 0.94              |
| 13              | 04 |    | 54.              | 194.01                        | 16     | 05 |    | 15      | 05 |    | 294.160    | 1.98E-03 | 5.62E+18 | -0.38             |
| 14              | 04 |    | 58.              | 206.36                        | 16     | 04 |    | 15      | 04 |    | 294.212    | 2.06E-03 | 5.84E+18 | 0.10              |
| 15              | 04 |    | 62.              | 219.60                        | 16     | 02 |    | 15      | 02 |    | 294.280    | 2.16E-03 | 6.13E+18 | 0.73              |
| 16              | 04 |    | 66.              | 233.72                        | 16     | 01 |    | 15      | 01 |    | 294.297    | 2.19E-03 | 6.20E+18 | 0.89              |
| 17              | 04 |    | 70.              | 248.72                        | 17     | 05 |    | 16      | 05 |    | 312.537    | 2.41E-03 | 5.68E+18 | -0.43             |
| 18              | 04 |    | 74.              | 264.60                        | 17     | 04 |    | 16      | 04 |    | 312.591    | 2.49E-03 | 5.87E+18 | 0.05              |
| 19              | 04 |    | 78.              | 281.37                        | 17     | 02 |    | 16      | 02 |    | 312.664    | 2.60E-03 | 6.13E+18 | 0.68              |
| 20              | 04 |    | 82.              | 299.02                        | 17     | 01 |    | 16      | 01 |    | 312.682    | 2.63E-03 | 6.19E+18 | 0.84              |