

Uncertainty codes

The uncertainty codes used by the HITRAN database are described in Table 5 of the HITRAN2004 paper [1], which is reproduced here. There are two types of uncertainty code corresponding to absolute uncertainty in cm⁻¹ (used for the line position and air pressure-induced line shift parameters) and relative uncertainty in % (used for the line intensity and broadening parameters).

Code	Absolute Uncertainty range	Code	Relative Uncertainty range
0	â¥ 1 or Unreported	0	Unreported or unavailable
1	â¥ 0.1 and < 1	1	Default or constant
2	â¥ 0.01 and < 0.1	2	Average or estimate
3	â¥ 0.001 and < 0.01	3	â¥ 20 %
4	â¥ 0.0001 and < 0.001	4	â¥ 10 % and < 20 %
5	â¥ 0.00001 and < 0.0001	5	â¥ 5 % and < 10 %
6	â¥ 0.000001 and < 0.00001	6	â¥ 2 % and < 5 %
7	â¥ 0.0000001 and < 0.000001	7	â¥ 1 % and < 2 %
8	â¥ 0.00000001 and < 0.0000001	8	< 1 %
9	â¥ 0.000000001 and < 0.00000001		

References

[1] L. S. Rothman, et al., "The HITRAN 2004 molecular spectroscopic database", J. Quant. Spectrosc. Radiat. Transfer 96, 139-204 (2005). [link to article] [ADS]