NEW EDITION OF THE HITRAN SPECTROSCOPIC COMPILATION

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The latest edition of the HITRAN spectrosocpic compilation[a] represents a major stride forward in several areas. Foremost for the scientific community is an extensive improvement of the parameters for many bands of practically all the 39 molecular species on the database (encompassing 93 isotopologues). Many of these improvements have been discussed in past workshops and meetings, and have finally come to fruition. This presentation highlights some of the more important of these upgrades. Preliminary comparisons with high-resolution laboratory and remote-sensing field observations indicate substantial improvements in simulations.

The line-by-line portion of the new compilation has undergone its second format revision since the first edition of HITRAN[b]. The line transition now contains the Einstein A-coefficient, statistical weights of the transition, allows for a more explicit and rigorous quantum identification, identifies lines that are subject to a line-coupling algorithm, and increases the number of parameters linked to references and uncertainty codes. Infrared and ultraviolet cross-sections have also been expanded; the former incorporates an additional 28 species to the compilation.

Free public distribution continues to be via an anonymous ftp-site.

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[a] L. S. Rothman et al *"The HITRAN 2004 Molecular Spectroscopic Database," JQSRT (in press, 2005).*

[b] R.A. McClatchey, W.S. Benedict, S.A. Clough, D.E. Burch, R.F. Calfee, K. Fox, L.S. Rothman, and J.S. Garing *"AFCRL Atmospheric Absorption Line Parameters Compilation," AFCRL-TR-0096 (1973).*

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