Readme for Supplementary/Alternate Absorption Cross-section Data

Folder Structure:

Type	Name	Description
[DIR]	HITRAN2012/	HITRAN2012 alternate cross-section sub-folder
[TXT]	Table S1. Sources.html	Table of sources for cross-section data in html format
[TXT]	Table S1. Sources.xls	Table of sources for cross-section data in spreadsheet format
[TXT]	Table S2.Molecules.html	Table of molecules in cross-section data in html format with corresponding identifier codes
[TXT]	Table S2.Molecules.xls	Table of molecules in cross-section data in spreadsheet format
[TXT]	Table S3.Cross-sections.html	Table of pressure-temperature sets of cross-section data in html format
[TXT]	Table S3.Cross-sections.xls	Table of pressure-temperature sets of cross-section data in spreadsheet format
[DIR]	cross_section_data/	Cross-sections only for updated molecules from HITRAN2016
[DIR]	cross_section_headers/	JSON headers for cross-sections given in cross_section_data
[DIR]	molecule_headers/	JSON headers for molecules given in cross_section_data
[TXT]	readme.pdf	This readme file
[DIR]	source_headers/	JSON headers for sources given in cross_section_data

This part of the HITRAN database contains absorption cross-sections that come from high-resolution laboratory observations, predominantly from Fourier transform spectrometers. Some of these measurements include small negative values, which for the HITRAN-formatted cross-sections were replaced by zeroes. In these cases we provide all the original cross-sections in a supplementary "Alternate" folder, because the negative values provide the user with some information about the noise level and other possible artifacts in the measurements.

Please note that the recommended way of getting the cross-section data is using the web-interface https://hitran.org/xsc/

If you are using the cross-sections from HITRAN, please cite the papers from the list below along with the original sources given in the bibliography files (.bib or .html).

HITRAN papers relevant to cross-sections:

1) "Infrared absorption cross-sections in HITRAN2016 and beyond: Expansion for climate, environment, and atmospheric applications," R.V. Kochanov, I.E. Gordon, L.S. Rothman, K.P. Shine, S.W. Sharpe, T.J. Johnson, T.J. Wallington, J.J. Harrison, P.F. Bernath, M. Birk, G. Wagner, K. Le Bris, I. Bravo, and C. Hill, *Journal of Quantitative Spectroscopy and Radiative Transfer*, volume 230, pages 172-221 (2019). DOI: 10.1016/j.jqsrt.2019.04.001.
2) "The HITRAN2016 molecular spectroscopic database," I.E. Gordon, L.S. Rothman, C. Hill, R.V. Kochanov, Y. Tan, P.F. Bernath, M. Birk, V. Boudon, A. Campargue, K.V. Chance, B.J. Drouin, J.-M. Flaud, R.R. Gamache, J.T. Hodges, D. Jacquemart, V.I. Perevalov, A. Perrin, K.P. Shine, M.-A.H. Smith, J. Tennyson, G.C. Toon, H. Tran, V.G. Tyuterev, A. Barbe, A.G. Csaszar, V.M. Devi, T. Furtenbacher, J.J. Harrison, J.-M. Hartmann, A. Jolly, T.J. Johnson, T. Karman, I. Kleiner, A.A. Kyuberis, J. Loos, O.M. Lyulin, S.T. Massie, S.N. Mikhailenko, N. Moazzen-Ahmadi, H.S.P. Muller, O.V. Naumenko, A.V. Nikitin, O.L. Polyansky, M. Rey, M. Rotger, S.W. Sharpe, K. Sung, E. Starikova, S.A. Tashkun, J. Vander Auwera, G. Wagner, J. Wilzewski, P. Wcislo, S. Yu, and E.J. Zak, *Journal of Quantitative Spectroscopy and Radiative Transfer*, volume 203, pages 3-69, (2017). DOI: 10.1016/j.jqsrt.2017.06.038.