

Interactive comment on “New and improved infrared absorption cross sections for dichlorodifluoromethane (CFC-12)” by J. J. Harrison

Anonymous Referee #2

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The new set of CFC-12 cross sections appears to represent a significant improvement over the existing set and will be a valuable addition to the databases.

The article seems clear enough and is generally well organized. The depth of the discussion on the history of refrigeration in the Introduction felt somewhat excessive.

There is much discussion on how the new cross sections improve the residuals in the analysis of atmospheric spectra, specifically for preliminary studies performed with the ACE-FTS, but this aspect ends up being vague because it is unclear from the text what the extent of the improvement actually is. Ideally, the paper would include figures

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showing examples of these preliminary studies, to best convey the magnitude of the problem with the original set of cross sections and the degree to which the new set of cross sections fixes the problem. Stating that the systematic features “go away” has less impact than a figure showing the actual residuals.

The author has chosen instead to reference a conference presentation that contains figures showing the spectral residuals from ACE-FTS studies. While this seems mostly calculated to avoid sharing authorship, it is a viable approach because the conference has assigned each presentation a “doi.” However, there is no text associated with the figures (being an oral presentation that the author described verbally at the conference), which could make it difficult for the average reader to interpret what they are seeing. I suggest it would be appropriate to mention in the current paper which specific slides are of interest and to provide some text in the current paper describing the salient details of the figures in the presentation. While not as convenient as having the figures in the article itself, this should make the discussion less vague.

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