Geoscientific

Model Development

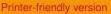Discussions

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Interactive

comment

Interactive comment on "Comparative analysis of atmospheric radiative transfer models using the Atmospheric Look-up table Generator (ALG) toolbox (version 2.0)" *by* Jorge Vicent et al.

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Dear Jérôme, On behalf of all the co-authors, please let me thank you for posting your comment, which I hope is duly addressed here. In our comparative study, libRadtran was configured with the REPTRAN coarse (at 15 cm-1 spectral sampling) parameterization for molecular absorption, which is the default option used by libRadtran. LibRadtran accepts other spectral samplings for REPTRAN: medium (5 cm-1) and fine (1 cm-1). Other parameterizations are also implemented in libRadtran, such as LOWTRAN, the integrated bands of Kato and Fu, and the possibility of directly using molecular cross-sections and optical deppth for higher spectral resolution. From libRadtran's

user manual, the REPTRAN parameterization is recommended for general user-case applications: "Though we recommend REPTRAN for spectral calculations, the molecular absorption pa-rameterization from LOWTRAN/SBDART by Ricchiazzi et al. (1998) is available mainly for compatibility reasons" In ALG, the current options are REPTRAN (3 resolution options) and LOWTRAN. The implementation of molecular cross-section is work in progress. Kind regards, Jorge

Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2019-188, 2019.