

Interactive comment on “Evaluating and improving the treatment of gases in radiation schemes: the Correlated K-Distribution Model Intercomparison Project (CKDMIP)” by Robin J. Hogan and Marco Matricardi

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We thank Anonymous Referee #2 for these positive and helpful comments.

It was an oversight of our paper not to mention non-LTE effects. The new version of the manuscript will include a brief discussion of this in section 2.2, and also mention in section 3.5 that the LTE assumption is made in the radiative transfer calculations. We will point out that the most well known non-LTE parameterizations for heating rates by Fomichev et al. (JGR 1998) blends between LTE and non-LTE models over a pressure

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range of 0.016–0.045 hPa. Therefore in CKDMIP it is appropriate to evaluate the heating rates calculated using the LTE assumptions to a pressure of around 0.02 hPa, but we should always be aware that for the most accurate results in an atmospheric model, these heating rates would need to be blended with those from a non-LTE scheme at pressures lower than around 0.045 hPa.

All the technical corrections have been made in the new manuscript, except for the one indicated for line 214. We don't see why it is necessary to replace "mean" with "average mean" when surely "mean" means "average" already.

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