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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Signs of reduced biospheric activity with progressing global warming: evidence from long-term records of atmospheric CO_2 mixing ratios in Central-Eastern Europe" *by* Łukasz Chmura et al.

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Question from the Editor:

"While reading the discussion and rereading the paper, I started wondering the source of the decrease in the seasonal amplitude of CO2 mixing ratios at the two East European sites. In the paper it is stated that this decrease is equally due to lowering of seasonal maxima and increase in minima (Figures 4 and 5). However, these minima and maxima are derived as differences from long term mean (i.e. average over the

seasonal cycle), and thus being affected by these minima and maxima. Thus, it seems to me that this could be a case of circular reasoning".

Reply:

We are not sure whether we understood your comment correctly. Let me reiterate our approach to the data originating from the sites discussed in the manuscript: (i) the available daily CO2 mixing ratio data were subject to smoothing using CCGvu 4.40 routine (Thoning et al., 1989) resulting in the smoothed records (cf. Fig. 1) (ii) CCGvu 4.40 routine calculated also trend line for each record (also shown in Fig.1b) (iii) detrended records shown in Fig. 2 were calculated by subtracting, point by point (i.e. on daily basis), the trend line from the smoothed record available for each monitoring site. Therefore, no averaging over seasonal cycle, as suggested by your comment, was applied in the detrending procedure. Thus, we are confident that no circular argument is involved in the reasoning pursued in our manuscript.

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