Reviewer #1

I have to confess that I agree not to all approaches and conclusions of the authors. However, I think that there are some interesting and unexpected results which would make over researchers in the field to consider in their trend studies. I recommend the paper for publication with minor revision.

Thank you for your comments.

We would greatly appreciate it if you could elaborate on any specific points or aspects of our approach or conclusions that you may not fully agree with. To be honest, we were also surprised by this result, since we claimed F30 and MgII as the best solar proxies in previous works. However, as we mentioned, the use of a reduced period in those analysis could be the reason.

Me critical comments are as follows.

1. The statement in line 143-144 is: “Among them, the more reliable were always the oldest, the sunspot number, and the solar fluxes at radio wavelengths…” It is hardly correct, because in many publications of the authors, as well as in the papers by Lastovicka and Russian group, the sunspot number was behind the F30, MgII and even Ly-a proxies.

You are right. We were referring to the historical context. We will clarify this in the revised version.

2. The authors state that the trend in foF2 they show at the end of the paper is close to theoretical estimates. However, it is worth mentioning that -0.79% per decade is much lower than the estimates based in the experimental data in many publications, including the authors recent papers. A value of -0.079% per year means (if we conventionally take average foF2 as 10 MHz) –0.0079 MHz per year. In the majority of recent papers, the trends are obtained of the order of –(0.02-0.05) MHz/year. I think that it is worth mentioning it in the paper.

You are correct. Using only data during minimum solar activity level, we obtain a trend which matches modeled foF2 trends forced by the increase in greenhouse gas concentration. We will include your comment in the revised version of our work. Specially, that in the majority of recent papers, the experimental trends are obtained of the order of –(0.02-0.05) MHz/year, that is an order of magnitude greater than the theoretical value, while our trend estimation, based on considering minimum epochs, has a closer agreement.

Reviewer #2

While this issue has been discussed extensively in previous studies, and the results vary across different papers, as the authors have noted, the choice of solar index is crucial for long-term trend studies where the dependence of foF2 on the solar cycle must be removed through regression with a solar index (such as Sunspot Numbers, F10.7, etc.).

Mikhailov et al. (2017) [doi:10.1002/2017JA023909] found a strong relationship between foE and R12, while for long-term foF2 studies, many researchers use F10.7.

Thank you very much for your positive comments.

We will add Mikhailov et al. (2017) in the discussions.