

Author's response

for the manuscript submitted by Chabrilat et al. to EGU sphere
(doi:10.5194/egusphere-2025-1327)

We thank the handling editor for his quick and positive review.

The two requested clarifications have been made as follows:

- Lines 80-82 of the revised manuscript:
"In chemical forecast mode, **the meteorological fields are constrained by observations while composition is running unconstrained**. IFS-COMPO thus operates similarly to a chemistry–transport model (Ménard et al., 2020) **or to a** climate model with meteorological fields nudged towards a climate reanalysis (Davis et al., 2022)."
- Line 920 of the revised manuscript, inserted sentence:
"**This approach implies that if the two reference datasets do not agree, the model will inevitably receive a lower score.**"

All figures have been revised to comply with guidelines about colour vision deficiencies:

- the contour plots now use the colour map "turbo" which complies better with these guidelines than the original colour map "jet".
- the line plots now use the default colour scheme of the matplotlib python library instead of the original red/green/blue/yellow colour scheme. The default colour scheme (light blue/orange/light green/red) is designed to follow these guidelines.

We took this opportunity to slightly modify

- Figure 3: the order of the four subplots has changed to better reflect the layout of figures 11-18, i.e. plots for the Arctic on top row and plots for the Antarctic on bottom row; the caption has been updated accordingly.
- Figures 11-18: their dimensions have decreased (while increasing the relative font size to keep readability) to allow printing on a single column of the final paper and lead to a much better layout of the final PDF.