

### General comments:

This study quantified daily gridded CO emissions in Central Asia for 2019-2024 and assessed CO trends and hotspots. This study provided actionable insights for inventory improvement and migration strategies. This topic is interesting and meaningful to readers. I only have some small suggestions.

### Special comments:

- 1 Lines 35-37. CO is also emitted by biomass burning. What about biomass burning emissions in the research region? For example, anthropogenic biomass burning for cooking and heating from wood and yak dung in rural areas.
- 2 Figure 1. Strangely, there are no power/steel plants or coal bases in the Central Asian countries. I also suggest adding the province or country names in Figure 1; otherwise, readers may be confused by the regions mentioned in the text.
- 3 Line 195-200. Equation 2 was used to calculate the change in CO emissions. But uncertainty is usually not defined as the change of certain values.
- 4 Figure 4A. Why coal fire also show a clear seasonal variation in CO emissions?
- 5 Figure 8. It is easy to imagine the CO emission unit in coal fire and urban centers as they are area sources. But for power plants, which are point sources, how do we calculate the emission? Or using the pixel data for the power plant location?
- 6 Table 1. Many cities, coal-fired sites, steel plants, and power plants are shown in Figure 1. So the data summarized in Table 1 are calculated from 1 typical site or averages of all the same types of locations?
- 7 Typo errors: please check the text again during revision. Some are listed below.
  - a) Line 82: In addition to Kazakhstan, Kyrgyzstan, and Uzbekistan, some parts of other countries like Tajikistan, Afghanistan, and Pakistan are also shown in Figure 1.
  - b) two “and then resampled” in line 100.
  - c) Line 147. (Li et al., 2025) to Li et al., (2025)
  - d) Use Figure or Fig. in the manuscript, not all of them.