

## Supplementary Material

The following items are provided as Supplementary Material alongside the manuscript:

### S1. TANGO Target Selection Outputs (Figure 5)

Files:

- Supplement\_Clearsky\_2022-03-22\_priority\_CO2.nc
- Supplement\_Cloud-Filtered\_2022-03-22\_priority\_CO2.nc
- Supplement\_Cloud\_Forecast\_2022-03-22\_priority\_CO2.nc

This supplementary dataset contains satellite target selection outputs for anthropogenic CO<sub>2</sub> and CH<sub>4</sub> emission sources simulated on 2022-03-22 under three cloud scenarios using the TANGO mission simulation pipeline.

### S2. Figure CO<sub>2</sub>-Prioritization TDL vs. EDL

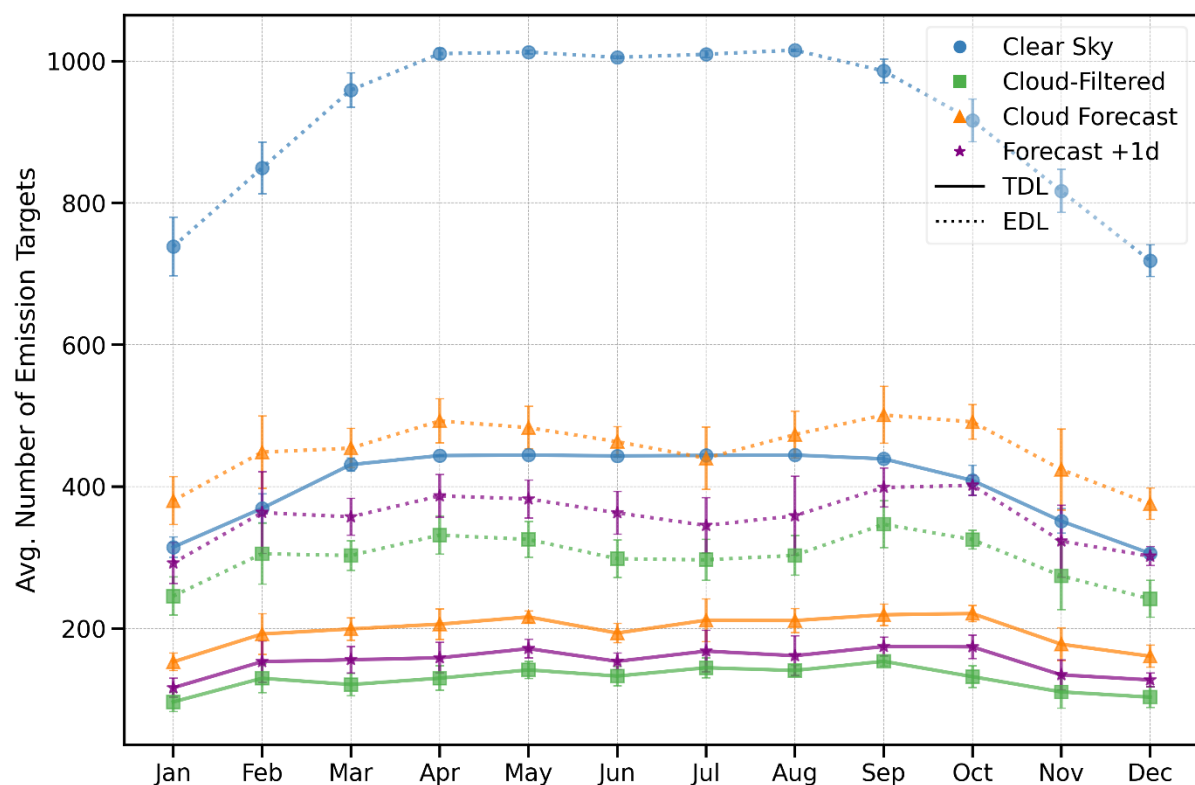


Figure S1: Monthly average number of detected point-source targets per four-day repeat cycle under CO<sub>2</sub>-prioritization for both TDL (solid lines) and EDL (dashed lines) across the four simulation scenarios: Clear-Sky (sky blue), Cloud-Filtered (green), Cloud-Forecast (orange), and Forecast +1 day (purple). This figure mirrors the format of Figure 7 but applies to the CO<sub>2</sub>-prioritization case, providing a direct comparison of TDL and EDL performance over 2022.