

Data Intake Processing and Verification Report

Background Information

- **Original Dataset Name:** Gridded posterior methane emissions
- **GHG Center Dataset Title:** TM5-4DVar Isotopic CH₄ Inverse Fluxes
- **Dataset Provider:** NASA
- **Date Obtained:** August 2023
- **Location Obtained From:**
https://gmao.gsfc.nasa.gov/gmaoftp/sourish/IDS/for_distribution/GHG-IAC/
- **Data Location in GHG Center:** tm54dvar-ch4flux-monthgrid-v1
- **Data POC(s):** Dr. Sourish Basu
- **Dataset File Type(s):** NetCDF
- **Projection (if different from WGS84):** NA

Data Transfer Confirmation

An SHA-256 checksum is used to detect high-level errors within data transmissions. Results from individual checksum file comparisons of pre-transfer and post-transfer shows all files were transferred successfully and no individual files had any transfer issues.

Data Intake Process

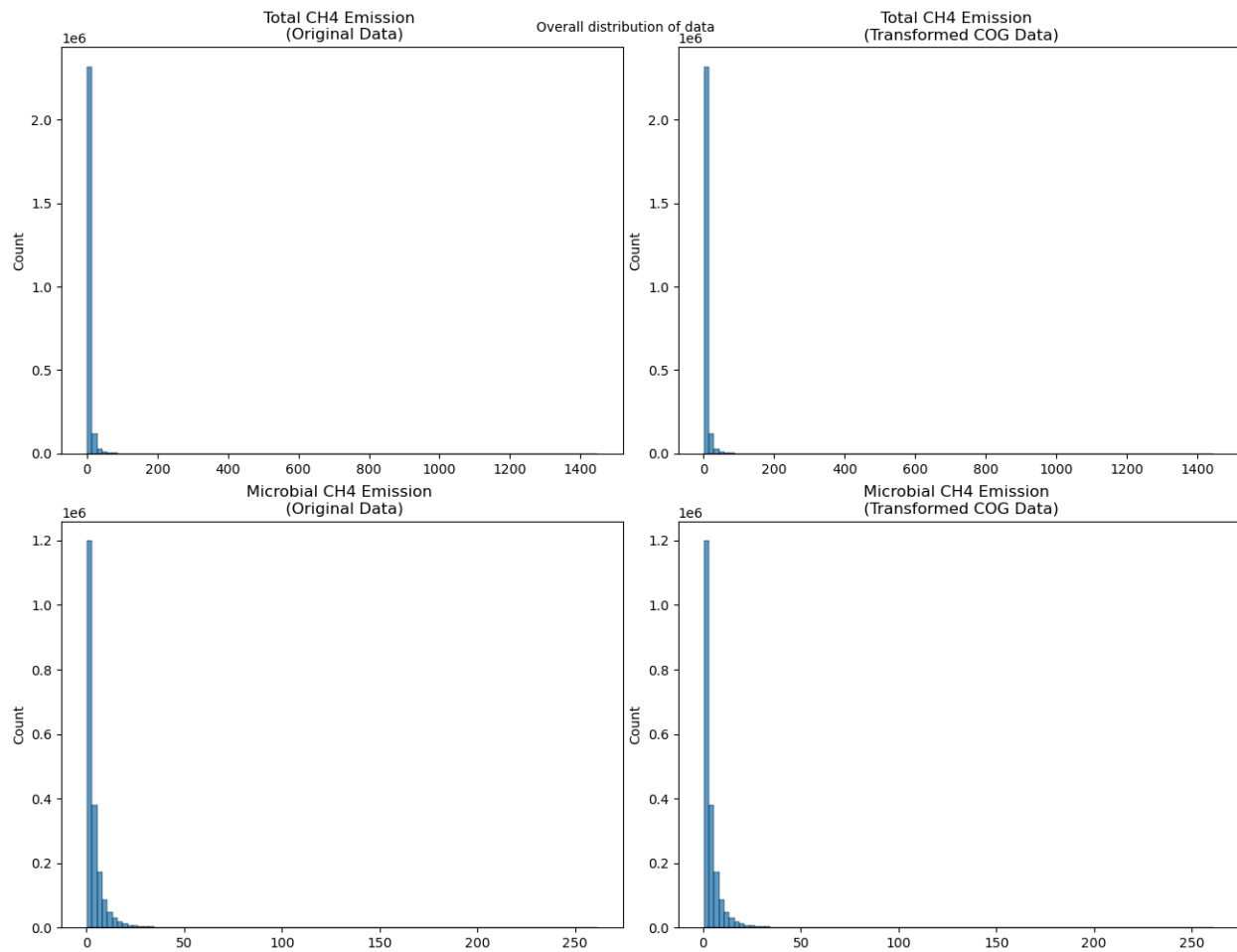
- https://us-ghg-center.github.io/ghgc-docs/data_workflow/tm54dvar-ch4flux-monthgrid-v1_Data_Flow.html

Overall Dataset Statistics

- Statistics across all files for all variable:

| | Minimum (g CH ₄ /m ² /year) | Maximum (g CH ₄ /m ² /year) | Mean (g CH ₄ /m ² /year) | Standard Deviation |
|------------------|--|--|---|--------------------|
| Original Data | 0.02421 | 1447.28702 | 3.51924 | 7.82113 |
| Transformed Data | 0.02421 | 1447.28702 | 3.51924 | 7.82113 |

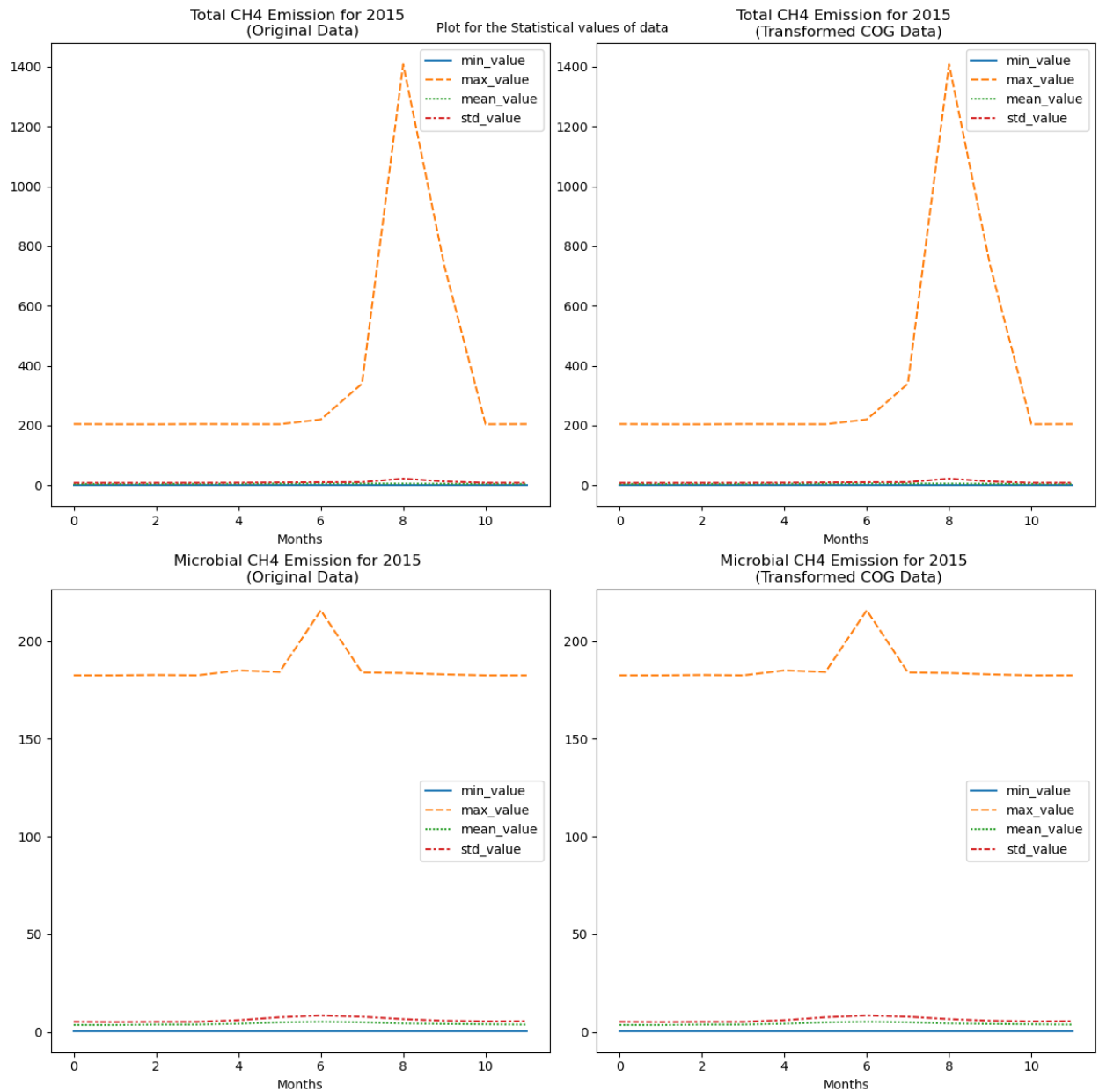
- Distribution of values in g CH₄/m²/year across all files for Total CH₄ emission variable and Microbial CH₄ emission variable:



- Statistics for Total CH₄ emission in November 2015:

| | Minimum (g CH ₄ /m ² /year) | Maximum (g CH ₄ /m ² /year) | Mean (g CH ₄ /m ² /year) | Standard Deviation |
|---------------------|---|---|--|--------------------|
| Original Data | 0.2173 | 204.3210 | 4.8278 | 8.5035 |
| Transformed Data | 0.2173 | 204.3210 | 4.8278 | 8.5035 |

- Statistics for Total CH₄ emission and Microbial CH₄ emission variable in 2015:



- Link to transformation record in [Jupyter Notebook](#)
- All values are in expected range

Summary

- We are confident that the transformation and display of data in the GHG Center is correct
- There were no problems identified in the data
- Link to [user notebook](#)
- Link to GHG Center data catalog [overview page](#)

Report Completed on:

MSFC POC for questions: [Deborah Smith](#), [Siddharth Chaudhary](#)