Contribution ID: **79** Type: **Talk (15min + 5min)**

OpenGHG - A community platform for greenhouse gas data analysis

Wednesday 26 February 2025 11:20 (20 minutes)

To address the urgent need to understand changes in greenhouse gas (GHG) emissions, there has been dramatic growth in GHG measurement and modelling systems in recent years. However, this growth has led to substantial challenges; to date, there has been little standardisation of data products, and the interpretation of GHG data requires combined information from numerous models.
OpenGHG is a platform that offers data retrieval from various public archives, data standardisation, and researcher-friendly data analysis tools. It helps researchers overcome the challenges posed by independent networks, archival standards, and varying spatial and temporal scales in greenhouse gas research. OpenGHG has an internal set of standards into which different data formats are converted. It offers data analysis and visualisation tools, a Jupyter Notebook interface, and will offer options for both cloud and local installations. Additionally, to handle large data we have employed the Zarr storage system for efficient file storage handling.
In this presentation, a demonstration of OpenGHG is being used in the development of a prototype "operational"emissions evaluation system for the UK, the Greenhouse gas Emissions Measurement and Modelling Advancement (GEMMA). This system will combine bottom-up (inventory-based) and top-down (observation-based) approaches to evaluate emissions in near-real time. An attempt will be made to shed light on some of the challenges faced and associated success stories that occurred during the development of this flexible and extensible community-led software to tackle scientific and technical challenges.
Keywords: machine-learning, writing, conferences, assessment
Key theme: academic writing

I want to participate in the youngRSE prize

yes

Primary authors: Dr MURPHY, Brendan (University of Bristol); Dr RIGBY, Matt (University of Bristol); SUTAR, Prasad (University of Bristol); Dr TUNNICLIFFE, Rachel (University of Bristol)

Presenter: SUTAR, Prasad (University of Bristol)

Session Classification: Workflows for data pipelines

Track Classification: Data and Software Management: computational workflows