Comparison Workshop

Introduction

NPL will host an informal Comparison Workshop, providing a space to share how comparisons between satellite datasets and Fiducial Reference Measurements (FRMs) are carried out in practice.

Positioned between the ESA FRM Workshop and the uncertainty training course, this session focuses on short, structured "show-and-tell" contributions rather than formal presentations. Each participant will contribute a few slides capturing their approach to comparison—from the nature of the datasets and associated challenges, through to comparison strategies, visualisation, and statistical analysis.

By bringing together perspectives from different communities, the workshop will highlight common challenges, reveal differences in methodologies, and exchange practical tips and techniques. It is intended as a first step towards identifying community good practices: by understanding what is currently done across domains, we can begin to explore where approaches align, where they differ, and what could form the basis of more consistent and robust comparison methods.

Information for participants: What to prepare

Participants are asked to submit 3 slides in advance, which will be collated into a single shared presentation for the workshop. The slides should be emailed to Emma Woolliams with the subject line: "Comparison Workshop Slides" by the 15th of May.

Each contribution should focus on how you perform comparisons in practice, using a real example. Here we are interested in the process, choice of statistics and visualisation (rather than the results themselves).

Slide 1: Context and data

- What is being compared?
    - e.g. satellite product(s), FRM dataset(s), or satellite–satellite comparisons
- What data are available?
    - Sampling characteristics, coverage, resolution
- What are the key challenges?
    - Temporal/spatial gaps, Representativeness issues, FRM-specific constraints (e.g. sparse measurements, campaign-based data)

Slide 2: Comparison process

- How are comparisons carried out?
    - Point-based vs gridded approaches, Direct/simultaneous matchups vs mismatched datasets
- How are collocations defined?
- Are any corrections or adjustments applied?
    - e.g. scaling, filtering, harmonisation steps
- Are more advanced approaches used?
    - e.g. triple collocation, multi-sensor frameworks

Slide 3: Visualisation and statistics

- How are comparisons visualised?
    - e.g. scatter plots, time series, maps, density plots
- What statistical metrics are calculated?
    - e.g. bias, RMSD, uncertainty estimates
- How are results interpreted or communicated?