Breakout Workshop on

Vicarious Calibration and Validation Protocols

Chairs

Giuseppe Zibordi, Kenneth Voss and B. Carol Johnson

giuseppe.zibordi@ec.europa.eu, kvoss@miami.edu, carol.johnson@nist.gov

Description

The Breakout Workshop will attempt to reach consensus on standardized protocols for the operational identification and application of in situ measurements to validation and system vicarious calibration (SVC) processes. Consensus should consider the need to apply state-of-the-art methods (e.g., detailed uncertainty budgets for in situ measurements), recognizing practical limitations intrinsic of validation and SVC processes (e.g., the difficulty/impossibility of addressing sub-pixel variability).

Separate sub-sessions on validation and SVC processes should answer the following key points:

i. What are the fundamental requirements for in situ measurements supporting single missions for regional/global applications or multiple-missions addressing climate studies (e.g., geophysical quantities, spectral characteristics, uncertainty budgets and traceability, geographical relevance, …) ?

ii. What are the fundamental physical methods to enforce equivalence of satellite and in situ data (e.g., application of identical corrections for brdf effects, corrections for minimizing the impact of different spectral bands, …) ?

iii. What are the fundamental criteria to be met for the construction of matchups (e.g., local spatial/ temporal variability, observation conditions, ranges of applicability, time-lags between in situ and satellite data, geographical origin of the in situ data, …) and additionally, what are the fundamental methods and criteria that should be commonly applied for the statistical analysis of matchup data and the following presentation of summary results (e.g., the statistical methods for the determination of systematic differences and dispersions affecting satellite data with respect to in situ measurements, the information complementing matchup analysis when presenting results, …) ?

Two talks will provide a seed for the discussion by laying out the current state of the art about these questions. The goal of the breakout session is to lead to the definition/consolidation of basic protocols (i.e., standard guides) supporting validation processes and SVC. Care will be placed in ranking requirements by stressing the fact that different spatial/temporal/geophysical applications may impose very different levels of requirements.

Key Questions

In agreement with the general description of the Breakout Workshop, and to lead to the definition/consolidation of basic protocols supporting validation and SVC processes, key questions are:

i. What are the fundamental requirements for in situ measurements supporting single missions for regional/global applications or multiple-missions for climate studies ?

ii. What are the fundamental physical methods to enforce equivalence of satellite and in situ data ?

iii. What are the fundamental criteria to be met for the construction of matchups and additionally what are the fundamental methods and criteria that should be applied for the statistical analysis of matchup data and the following presentation of summary results ?

Schedule/Format

Talk 1: Introduction to practices for the construction of in situ – satellite matchups, their application to the validation of data products and the presentation of matchup statistics (delivered by G. Zibordi, 15 minutes)

Group discussion (tentatively 45 minutes)

Coffee available (without break)

Talk 2: Introduction to practices for the construction of in situ – satellite matchups, their application to SVC and the statistical assessment of derived calibration factors (Delivered by K. Voss, 15 minutes)

Group discussion (tentatively 45 minutes)

Wrap-up and consensus consolidation (30 minutes)

Participants

Anyone involved in the validation of satellite ocean color data products or SVC is kindly invited to participate and contribute the breakout workshop.