

IOCS 2019

Breakout workshop 9: Atmospheric correction under complex/extreme environments

Co-chairs: Constant Mazeran (SOLVO), Amir Ibrahim (NASA), Robert Frouin (UCSD)

9:30 - 9:35 **Introduction: goal and organization of the workshop**
Constant Mazeran, Amir Ibrahim, Robert Frouin

Part I: Atmospheric correction over optically-complex waters (chair: Constant Mazeran)

9:35 - 9:45 **Key findings of current IOCGG WG Intercomparison of Atmospheric Correction Algorithms Over Optically-Complex Waters**

Cédric Jamet (ULCO)

9:45 – 9:55 **Review of EUMETSAT Bright Pixel Correction for Sentinel-3/OLCI**
Constant Mazeran (SOLVO)

9:55 – 10:05 **Review of CEOS/ESA/NASA ACIX I and ACIX II activity for Landsat/Sentinel-2 atmospheric correction over inland and nearshore coastal waters**
Nima Pahlevan (NASA/GSFC)

10:05 – 10:35 **Group discussion: What is the most robust strategy for AC over optically-complex waters?**

Possible outcomes: strategies and recommendations in the development of AC (bands, modelling, inverse method), ideas to handle the variety of IOP models at global scale, robustness to instrument radiometric calibration and noise, rationale for inter-comparison and validation

Note: coffee will be available from 10:00 outside the room in case people want to slip out

Part II: Atmospheric correction in the presence of absorbing aerosol (chair: Amir Ibrahim)

10:35 - 10:45 **Overview of the issue: physics and remote-sensing of absorbing aerosol**
Robert Frouin (UCSD)

10:45 – 11:15 **Group discussion: how to detect and correct for absorbing aerosols?**

Possible outcomes: capabilities and limitations of optical radiometry, use of bands for assessing the altitude of aerosol plumes (e.g. O2 band), requirements for future sensors (e.g. bands, polarization, LIDAR), challenge in the RTM, use of ancillary data (transport model)

Part III: Uncertainties of atmospheric correction (chair: Frédéric Mélin)

11:15 – 11:25 **Key findings of IOCGG WG Uncertainties in Ocean Colour Remote Sensing**
Frédéric Mélin (JRC)

11:25 – 11:55 **Group discussion: How to derive uncertainties in the atmospheric correction?**

Possible outcomes: main sources of uncertainty (radiometry, models), generic methodology for uncertainty propagation, per-pixel estimates, importance of spectral correlation, method to detect out-of-scope conditions, best practice for efficient delivery to users, requirements for future implementation

Final group discussion (co-chair: Constant Mazeran, Amir Ibrahim, Robert Frouin)

11:55 – 12:15 Summary of discussions, listing of other important subjects to be addressed in another context (e.g. shallow waters, synergy between sensors, use of numerical model outputs in the algorithm), preparation of the key message to the space agencies