

IASOA Atmosphere-Surface Exchanges (Flux) Working Group

January 31, 2018

Attendees: Sara Morris, Taneil Uttal, Chris Cox, Barbara Casati, Alexander Schulz, Alexander Makshtas, Zen Mariani, Elena Konopleva/Akish, Gabriela Schaepman, Andrey Grachev, Chris Fairall, David Cook

Role Call of group members

IASOA and YOPP:

- YOPP is an international activity initiated by World Meteorological Organization's World Weather Research Program (WWRP) at a component of the Polar Prediction Project (PPP)
- YOPP will take place from mid-2017 to mid-2019 (want full annual cycle)
- YOPP goal: to significantly advance our environmental prediction capabilities for the polar regions and beyond
- YOPP verification task team: supersites multivariate process-based evaluation (model focused)
 - o Supersites primarily IASOA observatories within the Arctic region (also have Antarctic supersites for YOPP)
 - o Focusing on surface energy budgets, fluxes, clouds, turbulence, etc.
 - o NWP model output, archived at high-frequency
- Special Observing Periods were chosen (Feb-March & July-August) for Arctic and Antarctic
 - o These periods are to concentrate focus on ensuring all obs available at during these periods (model output will remain the same during these SOPs as the rest of the year)
- Drafted list of observations details available/contributing from each of the IASOA stations online
- YOPP activities requiring observations/model validations from IASOA stations/observatories
- YOPP planning to archive model data around IASOA stations
- Observations require large effort to unify measurements and output formats
 - o Create observatory "gold-files" where data is formatted into one format so easier to use by modeling community for comparisons
 - o Will add in variables in addition to model requested data obs
 - o Will determine time (hourly, 3-hourly, etc.) resolution of observations within file
 - o Will only focus on special observing periods (for now)
- Determine which method, or both (bulk or eddy-correlation) the flux WG will plan to distribute the gold-files using
 - o Within gold-file give observations from both methods?
 - Or do we as observationalists make that expert decision?
 - o Also have to think about sampling variability (and biases) from both methods
 - Bulk is less noisy, but need surface roughness estimate
 - o Gold-file would give both methods and then let modelers compare against both
 - Can also see how the two methods compare during periods
 - o Designating an individual to create these files (Elena Konopleva??)
 - o Determining which algorithm or quality control techniques to use on gold-file outputs
- Need to evaluate which instruments are available at each IASOA station for determining methods

- Gold-files to also include parameters important for observations (even if not utilized by YOPP team analysis)

Action Items:

- YOPP and IASOA discussion to continue online
- Create table of available flux measurements at IASOA stations (Uttal, Konopleva, Morris)