

IASOA Radiation Working Group

May 4, 2016

Attendees: Sara Crepinsek, Chris Cox, Von Walden, Thomas Haiden, Diane Stanitski, Bob Stone, Sandy Starkweather

Introduction of group members

Presentation on Norwegian Experiment near N-ICE2015 – Seasonal variation of surface radiation and energy balance over Arctic sea ice during the N-ICE2015 experiment, long-term trend of Arctic sea ice becoming younger and thinner, few comprehensive measurements in seasons other than summer (since SHEBA in 1998), N-ICE2015 experiments goal to understand the effects of new, thin, first-year sea-ice regime, overview of N-ICE2015 website and descriptions of sub-projects and principle investigators, focus on disciplinary activities for now, map of ice flows and ship drifting, description of instrumentation used on the ship – standard meteorological measurements and broadband radiometers and licor eddy-covariance systems and ceilometer and DOE ARM micropulse lidar, overview of meteorological findings/figures, large temperature and pressure drops during winter, characterize storms by wind speed > 8m/s, cloud fraction figures from ceilometer - in winter time sky conditions are bimodal, comparison of N-ICE2015 campaign to that from the SHEBA campaign – finding that conditions are similar in both cases, radiation fluxes with fluxes being positive into the surface, good correlation with sensible heat and net radiation, latent heat is almost zero, comparison of clear versus cloudy days in the winter case – example of how data is affected, still need to know what heat flux is through the ice in order to complete the budget, experiment went on for about 6 months, winter weather was variable while summer was not, over next year will focus on interdisciplinary research between work packages, upwelling radiometers were always pointed at ice and not open water due to them being located on the fluxtower that was placed on the ice pack, have snow thickness and sea ice thickness core measurements also taken near the tower, storms are likely different at this location in the ocean than where SHEBA was, analysis of how/why temperatures fluctuate between -40 to zero in an event (can see 20 deg difference, but 40 deg is anomalous) but this might be normal for this area

Overview of IRS – overview of IRS2016 agenda and schedule, details about talks and key note speakers

Overview of BSRN and EGU meetings – overview of scientific review and workshop, questions: what should be the relationship between BSRN-CCIWG and IASOA-RWG? Cox has since taken chair of the cold climate issues working group, goals for YOPP - update BSRN archive and develop/deploy suite of traveling radiometer inter-comparison station and radiometer dome icing mitigation strategy comparison (possibly at Barrow station)

Direction of radiation working group for FY16-17 – answer the question: what should be the relationship between BSRN-CCIWG and IASOA-RWG, papers in progress, CRF pan-Arctic study, emerging themes: spatial context, validation/evaluation, process studies involving ice/snow, improving data quality, delineate ourselves from the BSRN, in moving science forward we will also move data management and quality forward, role of IASOA to recommend instrument, data quality, and data archiving improvements, focus on science will drive other aspects, recommend have the CCIWG and radiation working groups come together for a joint meeting in the future, operate in parallel with other IASOA working groups since many of us are sitting in multiple groups, periodically maybe all of the IASOA working groups should be having a work shop where all groups could meet together

Action Items:

- Look at which measurement technologies are still having functional issues in the Arctic (try to figure out how to assess/fix these issues before MOSAiC) – ALL
- Direction of radiation working group for the next year, emerging themes – ALL
- Send out draft/outline of CRF pan-Arctic study – Cox