WMO SPICE DAT Teleconference

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| **Date** | **04.09.2014** | **Time** | 13:00 – 15:00 (UTC) |
| **Purpose** | **SPICE / Data Analysis** | | |
| **attendees (strike through if not attending)** | John Kochendorfer, ~~Leena Leppänen~~, Heenna-Reetta Hanula~~,~~ ~~Niina Puttonen~~, ~~GyuWon Lee~~, ~~Antonella D. Bocchiola,~~ Samuel Buisan., ~~Yves Lejeune~~., Samuel Morin, Daqing Yang, Craig Smith, ~~Kai Wong~~, Mike Earle, ~~Jeff Hoover~~, ~~Audrey Reverdin~~, Floor Heuvel, Yves-Alain Roulet, ~~Lawrence W~~. , Paul Joe, Roy Rasmussen~~, Bruce Baker~~, ~~Rodica Nitu,~~ Mareile Wolff  Bruce Baker~~, J. Hendrikx, H. Liang, F. Sabatini, V. Vuglinsky~~, ~~S. Bilish~~, ~~S. MacDonell~~ , ~~O. Aulamo~~, K. Honda, ~~C. Zammit~~, ~~M. Karzinsky~~, ~~L. Lanza, A. Uriel, G. Diolaiuti, , Hyelim Kim, F. Boudala, B. Goodison,~~ T. Laine, ~~S. Landolt, A. Senese. E. Vuerich, Hee Jin~~ | | |
| **Distribution** | **All attendees; SPICE Project team** | | |
| **Moderator** | **M. Wolff** | **Recorder** | **M. Wolff & presenters** |

**Meeting Records** (**A** = Action / **D** = Decision / **I** = Information)

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| **#** | **A / I / D** | **Item Description** | **Owner** | **Due Date**  **[DD.MM.YYYY]** |
| 2.0 | **I** | **Agenda**   1. Progress-report: Quality Control (Mike) 2. Progress-report: Event Selection (Mareile) 3. Progress-report: Transfer-function R2-R3 (Roy) 4. Progress-report: Transfer-function R0-R1 (Daqing) 5. Progress-report: Transfer-function R1-R2 (Craig) 6. Progress-report: Uncertainty (John) 7. Progress-report: Analysis: Event statistics (Mareile) 8. Progress-report: Analysis: Transfer Functions (John) 9. Progress-report: Analysis: Non-catchment type instruments (Yves-Alain) 10. Reference report update (Mareile, Mike) |  |  |
|  |  | 1. **Progress-report Quality Control** | Mike |  |
| 2.1 | **I** | * Final testing of QC parameters for data from weighing gauges (Floor) * Defining aggregation approach for data from systems under test and ancillary gauges and optimizing QC approach  (Audrey, Floor) * Identified need for data quality flags to accompany QC procedures. Approach to be based on that used during Rainfall Intensity Intercomparison; proposal  to follow (Mike) |  |  |
|  |  | 1. **Progress-report: Event selection** | Mareile |  |
| 2.2 | **I** | * Overview and update on status and plan for NCAR data archive and data processing at separate telecom 15.9.2014 * Programming of event selection offline in progress * Testing of event selection will start with Mareile’s visit in Payerne, Switzerland in the mid of September |  |  |
|  |  | 1. **Progress-report: Transfer function R2-R1** | Roy |  |
| 2.3 | **I** | * Transfer function for CARE and Marshall showed differences which could be explained by a single ice-pellet- event * Numerical modelling of theoretical transfer function is ongoing (Matteo, Roy) * Try to use “clean” datasets for transfer functions * Check data for unusual events (ice/snow pellets) on a daily base and eliminate those from the initial analysis * Using Marshall data to analyze snow-events between 0° - -4° C |  |  |
| 2.4 | **A** | Samuel Buisan will resend his data-analysis of the Spanish site to Roy, which does not experience snow events below -4deg C | Samuel | 4.9.2014  done |
|  |  | 1. **Progress-report: Transfer-function R0-R1 (Daqing)** | Daqing |  |
| 2.5 | **I** | * Bush-gauge dataset from Valdai is composed of up to three different bush gauges, need to find out how they averaged the data to get the bush gauge reading * Stronger involvement of Russian colleagues in Valdai data analysis is necessary * Quantify differences between old and new analysis is part done and can be tested with SPICE 1 data/sites * Bush-Geonor and Bush-pluvio at Caribou Creek are very similar, both measuring less than DFIR/Geonor, maybe due to low winds * Need next winter’s data to analyze, hoping for snowfall events with higher wind speeds | Daqing |  |
|  |  | 1. **Progress-report: Transfer-function R1-R2 (Craig)** | Craig |  |
| 2.6 | **I** | Most of the R1 vs. R2 analysis that has been done up to now (Sept-2014) has already been summarized in the reference document prepared prior to the IOC-5 meeting in Sodankyla (<http://www.wmo.int/pages/prog/www/IMOP/meetings/SI/SPICE-IOC-5/5-1(2)_Summary%20of%20R0vsR1%20and%20R1vsR2.docx-dy.docx)>. Some analysis from the R1 vs. R2 intercomparison at CARE has been updated by Kai and presented at the 17th SMOI AMS meeting in Westminster Colorado. The extended abstract from this presentation can be found at <https://ams.confex.com/ams/21Applied17SMOI/webprogram/Manuscript/Paper247547/AMSjun2014paperA.pdf>. The R2 at CARE (heated Geonor in the double fence) is showing a consistent negative bias (~5%) as compared to the R1. The source of this bias has not yet been found but the most recent theory is that it could be caused by the heating of the Geonor. Kai plans on investigating this further by comparing heated vs unheated Geonor gauges installed in single Alter shields. Intercomparison of the heated vs. unheated R2 at Bratt’s Lake was inconclusive but this may be because of the higher wind speeds at the Bratt’s Lake site which results in more “noise” in the heated vs. non-heated relationship. Further lab tests of the heated Geonor were proposed to NCAR at the SMOI meeting in June.  The previous work on the R1 vs. R2 intercomparison at Jokioinen Finland by Craig was performed using data collected during the period of the first WMO Intercomparison (1988-1993) however FMI has kept the station running through to present. This intercomparison data has been requested from Ari Aaltonen of FMI and are currently being compiled. | Craig, Kai |  |
|  |  | 1. **Progress-report: Uncertainty** | John |  |
| 2.7 |  | Comprehensive comparisons of identical gauge/shield combinations from Marshall have been made in addition to the rain-only analysis that was previously shared with the group. The advantage of using identical systems for uncertainty assessment over using rain-only data (with different types of shielding) is that random uncertainty in both snow and rain events can be considered. In-depth continuation of these analyses requires more shared data available available from all sites, and potentially the availability of event data files from all sites (this is open for discussion). |  |  |
|  |  | 1. **Progress-report: Analysis: Event statistics** | Mareile |  |
| 2.8 |  | * Analysing tasks and questions are defined for starting the event statistics * Analysis can start as soon as eventdata are available * First results will be discussed/presented to the entire group to get feedback for the next steps * An intense period is planned in October/November with Mike visiting Payerne | Audrey, Mike, Floor, Mareile |  |
|  |  | 1. **Progress-report: Analysis: Transfer Functions** | John |  |
| 2.9 | **I** | A framework for choosing the 'ideal' transfer function form is developing. As discussed in Sodankyla, by combining data from multiple sites, different transfer functions can be created and tested against the available data by calculating actual (DFIR) precipitation from the gauge/shield combinations under test. These results can then be compared to the results to the actual DFIR accumulations. After thus creating one transfer function for every gauge/shield combination, this testing can be performed on the entire data set and it can also be applied to individual sites to examine the degree of uncertainty associated with different climates. To include sites that do not have a DFIR the R3 analysis methods must be finalized. We need as much event data as possible, from all sites with varying precipitation types and varying wind speeds. In addition a work plan must be formed, with a person or a group assigned to this task.  If the group approves, John Kochendorfer is willing to do the initial analysis using the reference gauges, but a significant amount of additional work will be wanted to apply these methods to all of the different gauges under test.  That work needs to be performed by a larger group, following a common method. |  |  |
|  |  | 1. **Progress-report: Analysis: Non-catchment type instruments** | Yves-Alain |  |
| 2.10 | **I** | * Analysis of Weissfluhjoch data in progress to identify issues which should be analyzed more detailed * Includes: disdrometer, videodisdrometer, camera, … * Analysis of the performance and capability for non-catchment type instruments to measure/assess   + Snowfall (quantity)   + Precipitation type   + Compare SYNOP code from the disdrometer with human observations * Joint project with the Swiss Polytechnical School and the Snow And Avalanche Research Institute, providing additional measurements:   + 2D Videodisdrometer installed in the DFIR (between the two wooden fences)   + A mobile X-band radar scanning above the site   + MASC installed in the DFIR * More contributors (sites, people, experts) are wished for this group | Yves-Alain |  |
|  |  | 1. **Reference report** | Mareile/ Mike on behalf of Rodica |  |
| 2.11 | **I** | Reference report is currently under revision in order to streamline all contributions from the different groups to achieve one concise document. | Rodica |  |
| 2.12 | **I** | **Next SPICE-TELECON: 12.9.2014, 13UTC**  Topic: Presentation by Audrey on google docs listing presentations and publications |  |  |