

2nd Annual report of the IACS Joint Body “Status of Mountain Snow Cover (JB-SMSC)”

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1. Coordination, networking and participation in conferences

For the coordination and networking (communication with JB-experts) of the Joint Body SMSC several meetings and participation in international conferences were initiated by organization of topic sessions on snow in mountains. In particular larger conferences such as EGU and IUGG were successfully used for this task as part of the JB. The following coordination/networking activities were carried out:

- Kickoff meeting for all WPs as online meeting on October 11th 2022
- Coordination meetings of JB chairs all organized as Zoom-meetings
- Participation at International Mountain Conference IMC2022 at Innsbruck with the focus session “Changes in Snow Cover in Mountainous Regions of the Earth” (co-chaired by S. Marshall, C. Marty, W. Schöner), <https://www.imc2025.info/sessions/id10-changes-in-snow-cover-in-mountainous-regions-of-the-earth/>
- Activity report to WMO EC_PHORS as part of the EC_PHORS 12 meeting (31-10-22 to 2-11-22, Geneva, WMO headquarter)
- Participation at the WMO-EUMETSAT Workshop “Mountain Snow Product Intercomparison Exercise: Concept Development”, EUMETSAT, Darmstadt 27-28 March 2023
- Participation at the WMO-GCW Snow-Watch Team meeting in Darmstadt 29 March 2023
- JB-Meeting as side event at EGU2023, Vienna, Wednesday 23-4-2023, ca. 15 participants
- Participation at GEO-Mountain Workshop, 12-6-2023, Geneva
- Preparation for participation at IUGG2023 at Berlin with Session “C09 Mountain Snow Cover Under Climate Change: From Past to Future” co-chaired by L. Ma, S. Marshall, W. Schöner
- Preparation of side event at IUGG 2023

2. Activities of the work packages

At the KO meeting of the JB-SMSC in October 2022, it was decided to focus on WP 1 and WP 2 in the first phase of the JB. This is clearly motivated by the urgent need of improving the information of mountain snowpack information through data availability and knowledge of changes in space and time. In preparation for and as a result of the JB-SMSC KO meeting, three experts agreed to serve as WP leaders for WP1, WP2 and WP3, respectively. The following experts expressed their interest and were approved as WP lead:

WP1: Dr. Tao Che, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, China

WP2: Dr. Michael Matiu, Department of Civil, Environmental and Mechanical Engineering, University of Trento, Italy

WP3: Dr. Kazuyoshi Suzuki, Institute of Arctic Climate and Environment Change Research, Japan Agency for Marine–Earth Science Technology JAMSTEC, Japan

2.1 WP 1 Lead by Tao Che

WP1 began by revising the conception/workplan for WP1 and discussing the first steps (low hanging fruits) of WP activities (e.g. inventory of snow measurements in mountains of the world). Other topics discussed were the definition on WP responsibilities and the platform for exchange within WP and with other WPs. This was discussed at the WP1 KO meeting (held by Zoom).

Currently, WP1 activities are on hold from a research stay of WP1 lead Tao Che to USA and focus was given the WP2 activity described below.

2.2 WP 2 Lead by Michael Matiu

WP2 started with online KO meeting on January 26th 2023. For technical collaboration Pumble was agreed on by the participants. As in WP1, first WP activities were discussed in particular looking for low-hanging fruits. Based on the JB-SMSC proposal and deliverables list it was agreed to pursue the following idea:

- Inventory of in-situ snow information from mountain regions of the world (using an online questionnaire) which could also serve as the basis for WP1 inventory
- Use the inventory as the basic material for a white paper on snow information from mountain regions of the world
- Further development of the essence of the white paper for a peer-reviewed paper

Based on this workplan further steps of WP2 activity included:

- Develop draft inventory forms (introduction and guideline, table spreadsheets as Excel-documents with the following information: meta-data information of snow station with defined level of measurement-quality, available publications/reports on mountain snow development, existing trend estimates, relevance of snow information for the region/country)
- Review and feedback from WP2 group of experts on the draft
- Final definition of inventory documents and send to experts for inventory information by June 15th (with extension until end of June 2023)
- Initial analysis of the data from the inventory-feedback in preparation for IUGG2023 JB-SMSC side event

Overall, the feedback was very promising, though some regions are not yet covered by meta-data snow information and were requested individually via email. Based on the initial activities, a core group of experts with particular interest in the topic begins to form.

In addition to these core activities, the JB-SMSC was invited to contribute to the WMO-EUMETSAT Workshop “Mountain Snow Product Intercomparison Exercise: Concept Development” in Darmstadt (27-28 March 2023).