31 March - 4 April 2008
Steamboat Springs Ski Village, CO

Storm Peak Laboratory

Second International Workshop on Space-based Snowfall Measurement

Program Committee

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CGMS IPWG International Precipitation Working Group

NASA GPM JAXA Global Precipitation Measurement

The program committee invites you to attend the 2nd International Workshop on Space-based Snowfall Measurement to be held in Steamboat Springs Ski Village, Colorado. The workshop is convened by the International Precipitation Working Group (IPWG), the GEWEX Radiation Panel (GRP), the NASA Precipitation Measurement Mission (PMM) program on behalf of the Global Precipitation Measurement (GPM) mission and the Storm Peak Laboratory (SPL) which is administered by the Desert Research Institute. The goal of the workshop is to bring together researchers focusing on the measurement of snowfall rate from space using active and passive microwave sensors. The purpose of the meeting is to assess the state of the science and measurement technology and to recommend future directions in research and technology development. The topics of interest include instrument development, retrieval techniques, assimilation systems, modeling of microwave radiative transfer within snow particles and snowy air, modeling of microphysical processes, surface snow measurement and ground validation. In concert with the location of the meeting, we are placing a special emphasis on the measurement of orographic snowfall.

Workshop format

The workshop will focus around the five main topics identified in the outline below. Expert panels will be assigned to review each topic led by a Panel Chair and Rapporteur. The Panel Chair will be invited to present a comprehensive review of the topic to the workshop based on input from all of the panel members given prior to the workshop and solicit additional short presentations by the panel members. The Powerpoint files for the review presentation and any additional presentations will be included on the IWSSM website (http://cimss.ssec.wisc.edu/iwssm/) prior to the meeting and updated by the presenter from community input before and after the workshop. Breakout groups for each topic will be assigned by the Workshop Committee, and will be led by members of the panels, for the purpose of generating multidisciplinary input to each topic. The Rapporteur from each panel will be asked to contribute a summary of the panel's findings to a workshop report.

An optional tour of the Storm Peak Laboratory, located at the top of Mt. Werner, will be conducted during the meeting. There, a demonstration of ground based snow and aerosol measurement facilities of the laboratory, which are available for ground validation, is planned. Attendees are invited to demonstrate their own ground measurement systems where practical to transport or satellite–based measurements when overpasses are available. Assistance will be given to those interested, in transporting their instruments up to and back down from the laboratory if they wish to participate. Real time or prior space-based measurements of snowfall in the Mt. Werner area, to be validated against laboratory observations, are also encouraged. Attendees will be given the choice to either ski up to the laboratory (using the lifts) or be transported using a combination of the lifts and snow mobiles.

Registration and a small reception is planned for the evening of Monday, March 31, 2008. A registration fee of $250 will be charged and can be paid on the IWSSM website (http://cimss.ssec.wisc.edu/iwssm/). Workshop attendees need to pay the registration fee on line by credit card after the 2nd circular comes out in early January with a deadline of Feb 1, 2008. The workshop will be convened the morning of Tuesday, April 1, 2008 and end on the afternoon of Friday, April 4, 2008. The Steamboat Group Sales has made 32 hotel and lodge rooms available at the Thunderhead lodge (ski in/ski out) from Sunday March 30-Saturday April 5 at government rates of $141/night and $109/night respectively for this event. Additional rooms at these rates will be made available based on availability, which is expected to be sufficient if one registers early. **Reservations are held under the Storm Peak Laboratory group name with Steamboat Resorts, please reference this when calling about rooms.** Discounted lift tickets of $48/day will be available for family members, and workshop attendees for skiing days outside of the lab tour, with 2 weeks advance notice. (Normal rate is $85 per day). For more information and registration, please visit http://cimss.ssec.wisc.edu/iwssm/.

Outline of topic areas

1. Applications
   - Water Cycle Budget
     - i. middle latitude mountain ranges
     - ii. Polar latitudes
     - iii. High latitudes
   - Hydrology
     - i. Snowpack, storage
     - ii. Snowmelt
   - Snowfall Forecasting
     - i. NWP forecasts driven by satellite measurements
     - ii. Nowcasting, Short Range Forecasting, Severe weather
2. Global and Regional Detection and Estimation of Snowfall
   - Retrieval based
   - Data Assimilation
   - Statistical, physical and blended approaches for snowfall retrieval
   - Measurement strategies for climate. Forecast and other applications
3. Modeling of snow and its radiative properties
   - Particle optical properties
   - Cloud microphysics modeling
   - Forward modeling uncertainties
4. New technology
   - Active/passive sensor combination (CloudSat/AQUA), GPM, EarthCare
   - Potential Satellite Missions
   - Microwave and sub-millimeter radiometers
   - Ground based remote sensing
5. Validation
   - Validation requirements for global satellite retrievals
   - High latitude validation sites
   - Field campaigns