

CONTRIBUTION OF ASI COSMO-SKYMED MISSION TO THE SPACE TASK GROUP FOR THE INTERNATIONAL POLAR YEAR

Fabrizio Battazza(1), Giuseppe Bianco(2), Achille Ciappa(3), Alessandro Coletta(1), Luca Pietranera(3)

⁽¹⁾ ASI – Agenzia Spaziale Italiana, Viale Liegi 26, 00198, Rome, Italy

⁽²⁾ ASI - Agenzia Spaziale Italiana, Località Terlecchia, 75100 Matera (MT), Italy

⁽³⁾ e-Geos S.p.A., Via Cannizzaro, 71, 00156, Rome, Italy

ABSTRACT

Space Task Group (STG) membership includes representatives from the national space agencies of Brazil, Canada, China, France, Germany, Italy, Japan, Russian Federation, UK, USA, the European Space Agency (ESA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) which together represents 26 nations. The IPY (International Polar Year) STG was established for the purpose of space agency planning, processing and archiving of the IPY Earth Observation legacy dataset.

The operating strategy for the STG is to satisfy IPY science requirements in a fashion that distributes the acquisition burden across the space agencies whilst recognizing the operational mandates that guide the activities of each agency. The primary objectives of STG meetings have been to review science requirements, to provide agency reports on progress in support of IPY, and to identify and solicit new members. The STG made relevant progress towards these objectives [3].

From the poles campaigns ice surface velocity will be used to study the ice flux from the ice sheets in to the oceans and to better understand controls on the motion of ice streams and the break-up of ice shelves including an intense routine monitoring campaign following the Wilkins Ice Shelf break up, which demonstrated the importance of SAR for satellite daily monitoring of the polar regions [3].

COSMO-SkyMed, the Italian X-band SAR constellation, conducted an intense campaign on the Wilkins ice shelf, monitoring the disintegration events and the ice movements over large and medium areas [1]. The disintegration of the Wilkins Ice Shelf started in 2007-2008. On March 2009 another consistent collapse occurred, causing the brake of the ice bridge located between the Charcot island and the Antarctic peninsula. In April and May 2009 the phenomenon is going ahead and main cracks appeared also in the shelf placed between Latady island and the Antarctic

peninsula. The prediction of the scientific experts are not optimistic and other disintegrations are expected to occur for the next future.

COSMO-SkyMed data were used to detect glacier velocity field using also spotlight high resolution images with time intervals of 8 and 16 days [2]. COSMO-SkyMed constellation observations on the Perito Moreno (Argentina) glacier reveal the velocity fields and the reduction occurred.

The aim of this paper is to present the contribution provided by ASI in the framework of the Space Task Group for the International Polar Year.

References

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