# REPORT OF THE CHAIRPERSON OF SESSION I: CURRENT SYSTEMS TO DERIVE ATMOSPHERIC MOTION VECTORS

**Chairperson: Masami Tokuno**

Session I contained five presentations, which described the operational satellite wind product system. Each of the major production centers described recent improvements, future plans and product quality assessment of the Atmospheric Motion Vector (AMV) product. A common interest in many of the presentations was the improvement of the quality of the winds fields generated with data from geostationary satellites.

The first presentation by Jaime Daniels highlighted the need for operational wind products to be generated on an hourly basis instead of on a 3 hourly basis in order to provide a more continuous AMV dataset for NWS forecasters. He also showed the advantage of the addition of 13.3μm channel on the GOES-12 imager to improve the heights assigned to cloud tracers. GOES-12 IR winds are nearly unbiased after pre-determined order is used in final height method selection. Radiance bias correction is needed for CO2 height and H2O intercept heights solutions to improve of the accuracy of the height assignment. The 3.9μm cloud drift wind product has now been transitioned into the operational environment at NOAA/NESDIS providing improved low-level cloud drift wind coverage at night in both the large scale and storm scale environments. GOES-12 super rapid scan imagery and AMVs data from these data were demonstrated to support the field experiments such as the GOES rapid-scan Wind Experiment/(GWINDEX)-3/Pacific Land Falling Jets Experiment (PACJET) and the Atlantic THORPEX Regional Campaign (A-TreC).

Kenneth Holmlund presented the current status of the AMVs derived all Meteosat series spacecrafts comparing the performance of the AMVs derived with first and second generation satellite data, including a brief look into the future and the foreseen evolution of the operationally derived wind fields. Satellite wind products of Meteosat 5-7(MTP) are produced and disseminated as usual, however further improvements are expected for cloud classification and calibration. The commissioning of Meteosat-8 (MSG-1) was finished and the quantity of the satellite wind product of MSG-1 is greatly superior to that of MTP, although the quality of MSG-1 is similar to MTP with appropriate filtering. Further improvements are expected, particularly with low-level clouds and height assignment.

Xu Jianmin presented the AMV derivation scheme for the FY2 meteorological satellite that is based upon the NSMC's AMV derivation scheme for GMS-5. In the scheme, image navigation and calibration of FY2 are improved. The height assignment procedure is also improved by using atmospheric radiation reduction look up tables. Cloud filtering is done on segment bases and is achieved through use of a dynamical threshold method. This approach performs well for most areas, however, there are still several problems that need to be addressed.

Sant Prasad presented the status of Cloud Motion Vectors (CMVs) from infrared and visible data from the Kalpana–1 satellite. He explained, in detail, the derivation technique and the validation of CMVs with the available radiosondes observations and METEOSAT-5 CMVs. The quality of Kalpana-1 CMVs is close to that of Meteosat-5, but the comparison does not indicate very high quality of Kalpana-1 CMVs. CMVs are useful to detect synoptic features associated with onset of southeast monsoon, and are available for substantial improvements in the analysis and model predicted rainfall.

Ryoji Kumabe presented renewal of the MSC operational AMV extraction system where manual quality control is replaced with an automated approach involving the generation of the QI and RFF quality flags. The accuracy of the high density AMVs is about the same level as that of previous MSC's AMV. He also showed the present height assignment scheme used and the result of an experiment to adopt a technique for semi transparent cirrus cloud developed in CMA.