

CGMS-XXXIV-WP-03
Prepared by IMD/INDIA

Current status of Cloud Motion Vectors (CMVs) and Water
Vapour Winds (WVWs) derived from KALPANA-1 and
INSAT-3A satellites.

Current status of Cloud Motion Vectors (CMVs) and Water
Vapour Winds (WVWs) derived from KALPANA-1 and
INSAT-3A satellites

CGMS Members are invited to take note.

Current status of Cloud Motion Vectors(CMV) and Water Vapour Winds (WVWs) derived from KALPANA-1 and INSAT-3A satellites

Introduction:

The aim of this paper is to provide an update on the status and developments of the satellite winds at India Meteorological Department, India. Cloud Motion Vectors are being derived operationally using KALPANA-1 and INSAT-3A IR data. CMVs at 00 and 07 UTC are derived from Kalpana-1 and 12 UTC CMVs from INSAT-3A IR data. These CMVs are regularly put on GTS and also stored by UK Met office for monitoring of CMVs. Simultaneously these CMVs are also put on BUFR format regularly at 00 UTC and 07:30 UTC. These CMVs are now covering larger area (45°S to 45°N and 40°E to 140°E). Efforts are also being made to derive the CMVs using Visible data at least once a day. Water Vapour Winds from Kalpana-1 data have also been derived regularly at 00Z and 07:30 UTC in test mode. Validations of these winds are in progress.

Derivation of Operational Cloud Motion Vectors

In order to forecast weather, knowledge of the current state of the atmosphere is essential. Conventional surface-based observations are sparse in both space and time, whereas satellite-based observations provide near global coverage at regular time intervals. The derivation of wind vectors from consecutive geostationary satellite images is an important source of

global wind information. These data are regularly input into the large computer models used for weather forecasting. They are especially useful over the world's oceans and the more remote continental areas.

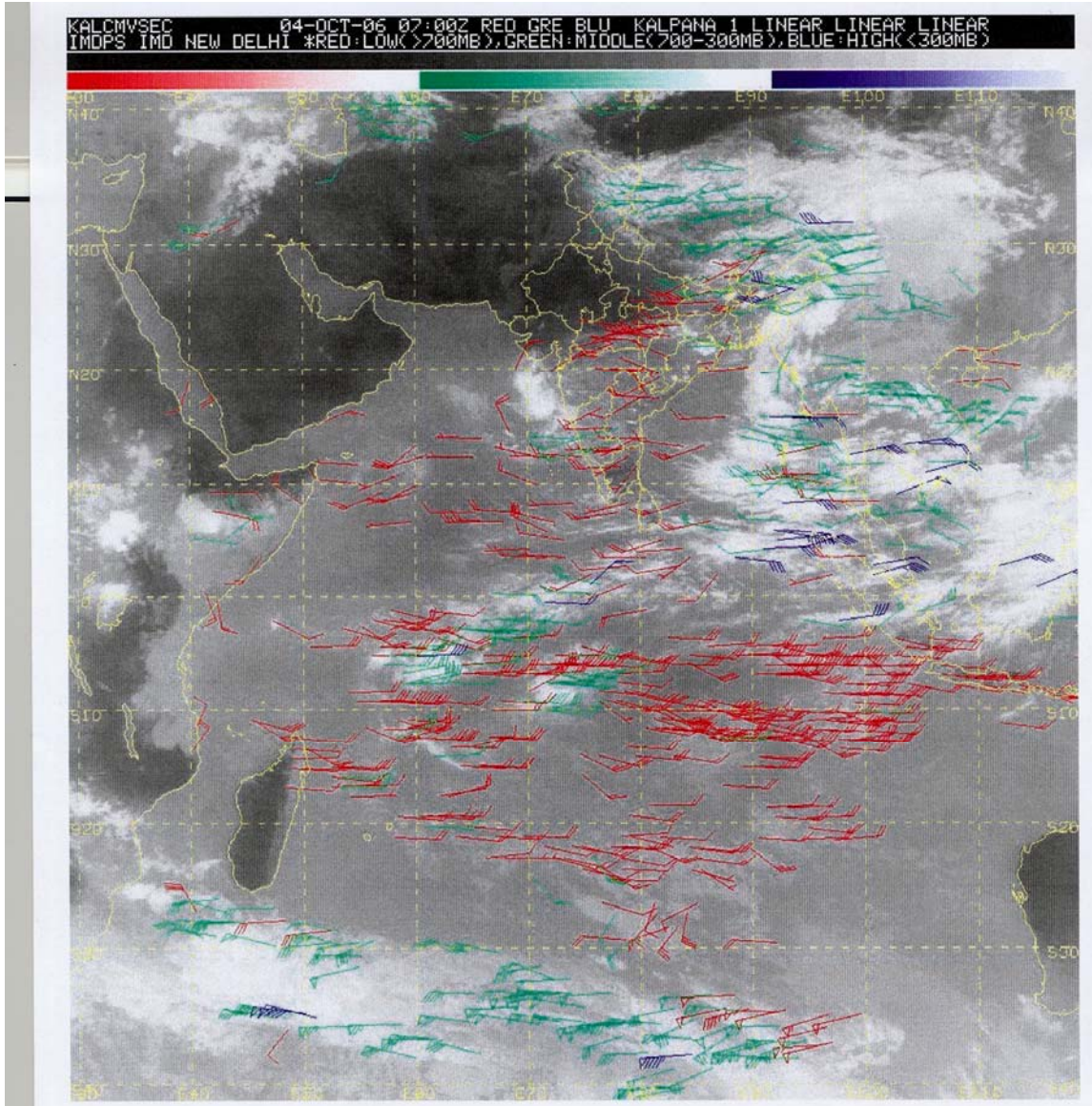
CMVs derived from Kalpana-1 Satellite

RED- (1000-700hPa) Green- (700-400hPa) Blue- (400-100hPa)

IMD extracts wind vectors from Kalpana-1 and Insat-3A image data routinely. The scheme is based on the tracking of clouds in Kalpana-1 and Insat-3A image data, using sequences of consecutive images. Quality controlled sets of wind vectors for the 00 and 07UTC for Kalpana-1 and 12UTC for Insat-3A are distributed regularly over the GTS.

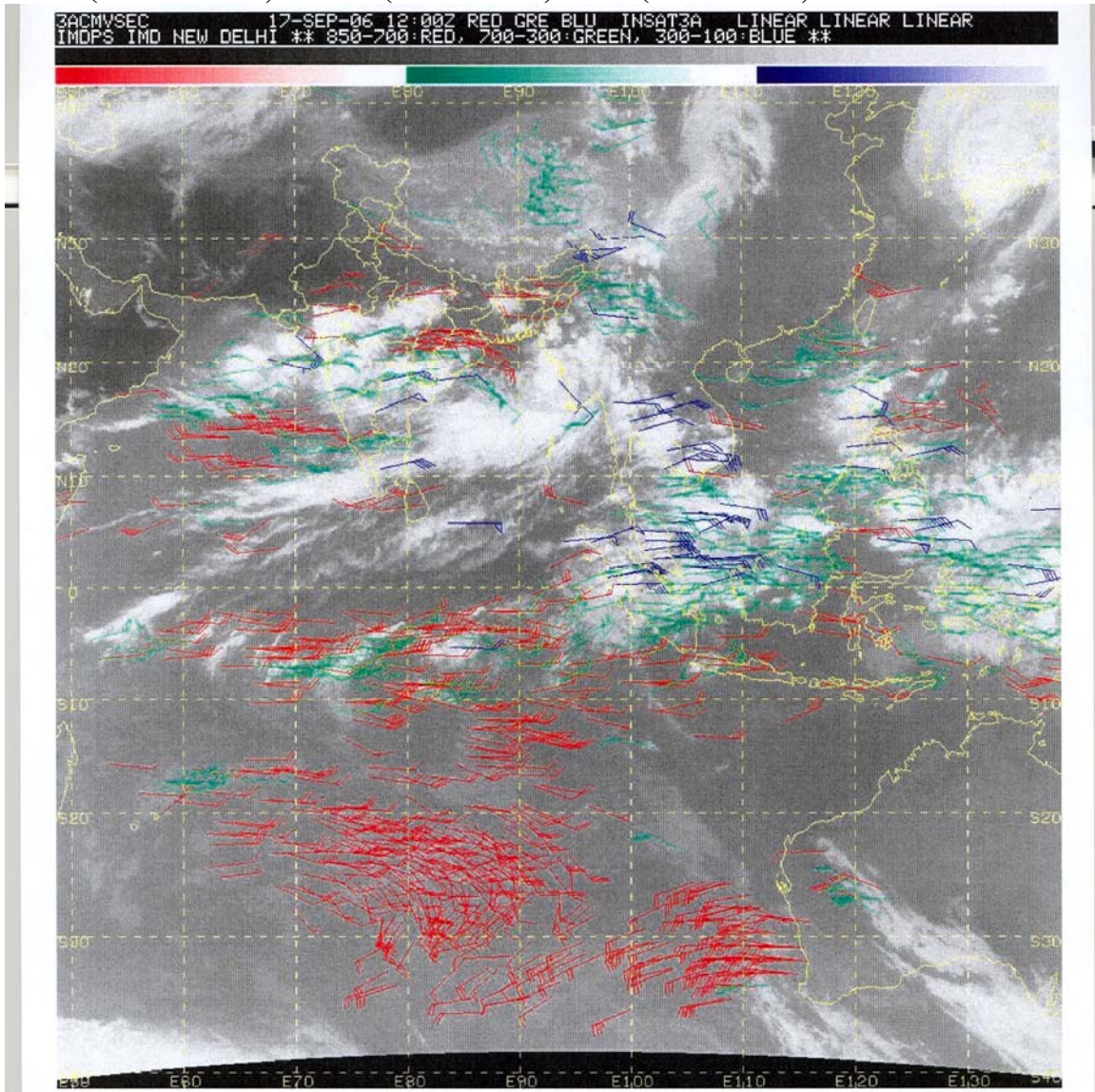
WWWs derived from Kalpana-1 Satellite

Green- (351-500hPa) Yellow- (251-350hPa) Blue- (250-100hPa)



CMVs derived from INSAT-3A Satellite

RED- (1000-700hPa) Green- (700-400hPa) Blue- (400-100hPa)



Proj:Mercator
WVW

2006-09-08 00:00:04
WATER VAPOUR WINDS

Sat:Kalpana-1

WV No Enhancement

