## Kalpana-1 AMV: October 2016

AMVs vs Radiosonde (0000 & 1200 UTC)

Mid level CMV         378         5.2         5.6         1.6         3.5         16.2         -1.6         13.2         14.8           High level CMV         838         6.8         7.4         2.8         4.8         15.9         0.3         20.2         19.9           High level WVWV         1097         6.3         6.3         3.3         4.1         14.7         0.7         20.6         19.9           Tropics         No of Collocation         MVD         RMSVD         SD         Mean Speed Dif (ABS)         Mean Dir Dif Bias Speed (ABS)         Mean Speed Speed Speed Speed Speed Speed (ABS)         Mean Many         Mean Speed Speed Speed (ABS)         Mean Speed Speed Speed Speed Speed Speed Speed (ABS)         Mean Speed S	Northern hemisphere	No of Colloca tion	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
High level WVWV   1097   6.3   6.3   3.3   4.1   14.7   0.7   20.6   19.9	Low level CMV Mid level CMV	378	5.2		1.6	3.5	16.2	-1.6	13.2	14.8
Tropics	High level CMV High level WVWV									19.9 19.9
Mid level CMV 29 3.6 3.6 0.3 2.1 19.2 0.9 8.0 7.1 High level CMV 3477 5.7 6.5 3.2 4.1 17.3 -1.2 11.3 12. High level WVWV 4580 6.2 7.1 3.5 4.4 18.0 1.9 14.0 12.    Southern hemisphere	Tropics		MVD	RMSVD	SD	Speed Dif	Dir Dif	Bias	Speed	Mean Speed RS
High level CMV	Low level CMV	75	4.7	4.9	0.9	3.4	24.7	1.0	6.8	5.8
No of hemisphere   No of Collocation   No of hemisphere   No of Collocation   No of hemisphere   No of Collocation   No of Collocation   No of hemisphere   No of Collocation   No of Co	Mid level CMV	29	3.6	3.6	0.3	2.1	19.2	0.9	8.0	7.1
Southern   No of hemisphere   Collocation   MVD   RMSVD   SD   Speed   Dif (ABS)   Mean   Speed (ABS)   Speed (A	High level CMV	3477	5.7	6.5	3.2	4.1	17.3	-1.2	11.3	12.4
Southern hemisphere	High level WVWV	4580	6.2	7.1	3.5	4.4	18.0	1.9	14.0	12.0
Mid level CMV High level CMV High level CMV  A 8.7 9.1 1.8 5.4 10.3 5.1 28.7 23.6    Speed Dif (ABS)   Collocation   Collocation			MVD	RMSVD	SD	Speed Dif	Dir Dif	Bias	Speed	Mean Speed RS
High level WVWV	Low level CMV Mid level CMV	6	3.8	3.8	0.1	3.6	8.8	-3.6	6.7	10.3
No of Collocation	High level CMV	14	13.6	13.8	1.5	9.7	18.0	-3.5	22.2	25.7
No of Collocation	High level WVWV	4	8.7	9.1	1.8	5.4	10.3	5.1	28.7	23.6
Mid level CMV 407 4.9 5.3 1.8 3.2 15.9 -1.2 12.9 14.1	Global		MVD	RMSVD	SD	Speed Dif	Dir Dif	Bias	Speed	Speed
High level CMV 4329 5.9 6.9 3.4 4.3 16.8 -0.9 13.3 14.2	Low level CMV Mid level CMV	407	4.9	5.3	1.8	3.2	15.9	-1.2	12.9	14.1
	High level CMV	4329	5.9	6.9	3.4	4.3	16.8	-0.9	13.3	14.2

High level WVWV

5681

6.2

7.2

3.6

4.4

17.1

1.8

15.4

13.6

MVD: Mean vector difference

RMSVD: Root mean square vector difference

SD: Standard Deviation

Mean Speed Dif (ABS): Absolute mean wind speed difference Mean Dir Dif (ABS): Absolute mean wind direction difference

High level: 100-400hPa Mid level: 401-700hPa Low level: 701-975hPa

MVD, RMSVD, SD, Mean Speed Dif, Mean Speed AMV, Mean Speed RS are in ms<sup>-1</sup>, Mean Dir Dif is in degree.

## **Collocation Criteria:**

- All AMVs within 150km of each radiosonde location and pressure difference ±20hPa are considered for validation.
- Collocation pairs with speed difference greater than 30ms<sup>-1</sup> and direction difference greater than 60° are screened out.
- Quality indicator is not used for the current validation.