

# Kalpana-1 AMV: October 2016

## AMVs vs Radiosonde (0000 & 1200 UTC)

Northern hemisphere	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level CMV	201	4.7	5.0	1.4	3.2	23.8	1.1	7.9	6.9
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 (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level CMV	75	4.7	4.9	0.9	3.4	24.7	1.0	6.8	5.8
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	12.4
High level WVWV	4580	6.2	7.1	3.5	4.4	18.0	1.9	14.0	12.0

Southern hemisphere	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level CMV	6	3.8	3.8	0.1	3.6	8.8	-3.6	6.7	10.3
Mid level CMV									
High level CMV	14	13.6	13.8	1.5	9.7	18.0	-3.5	22.2	25.7
High level WVWV	4	8.7	9.1	1.8	5.4	10.3	5.1	28.7	23.6

Global	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level CMV	282	4.9	5.2	1.4	3.4	24.0	1.0	8.0	7.0
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  $\text{ms}^{-1}$ , Mean Dir Dif is in degree.**

**Collocation Criteria:**

- All AMVs within 150km of each radiosonde location and pressure difference  $\pm 20\text{hPa}$  are considered for validation.
- Collocation pairs with speed difference greater than  $30\text{ms}^{-1}$  and direction difference greater than  $60^\circ$  are screened out.
- Quality indicator is not used for the current validation.