

Kalpana-1 AMV: January 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	747	5.2	5.8	2.4	3.6	22.5	0.1	8.5	8.5
Mid level CMV	1098	6.6	7.4	3.1	4.6	13.6	-2.2	17.4	19.6
High level CMV	1150	7.5	8.4	3.6	5.0	10.7	-1.4	28.5	29.9
High level WVWV	2518	8.0	8.0	4.9	5.1	11.4	0.7	30.2	29.5

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	301	4.6	4.9	1.5	2.7	29.4	0.4	6.9	6.5
Mid level CMV	191	4.3	4.4	0.7	2.4	23.6	0.4	8.5	8.1
High level CMV	1726	5.5	6.0	2.5	3.6	20.8	0.2	11.2	11.0
High level WVWV	2897	5.6	6.4	3.0	3.7	19.0	1.2	13.5	12.3

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	8	6.7	6.8	0.4	3.9	46.4	-1.2	6.3	7.4
Mid level CMV	9	4.5	4.5	0.6	3.9	12.6	3.2	9.7	6.6
High level CMV	128	7.2	7.6	1.7	5.8	12.0	-3.7	15.5	19.2
High level WVWV	240	7.5	7.9	2.0	5.9	12.9	1.4	18.9	17.4

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	1056	5.0	5.6	2.4	3.3	24.9	0.2	8.1	7.9
Mid level CMV	1298	6.2	7.0	3.1	4.1	15.2	-1.6	16.1	17.8
High level CMV	3004	6.4	7.4	3.6	4.1	16.3	-0.6	18.5	19.2
High level WVWV	5655	6.8	8.1	4.4	4.4	15.4	1.0	20.9	20.0

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^{-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 30ms^{-1} and direction difference greater than 60° are screened out.
- Quality indicator is not used for the current validation.