

Kalpana-1 AMV: December 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	781	4.9	5.4	2.1	3.3	22.5	-0.3	8.4	8.8
Mid level CMV	749	6.0	6.7	2.8	4.1	12.5	-1.9	18.4	20.3
High level CMV	816	7.5	8.3	3.2	5.6	8.1	-0.8	31.1	31.9
High level WVVV	1723	8.1	8.1	4.5	5.7	10.1	1.3	33.5	32.2

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	133	4.7	5.0	1.3	3.1	24.8	-0.5	7.5	8.0
Mid level CMV	76	4.4	4.5	0.7	3.0	20.6	0.9	8.5	7.6
High level CMV	4722	5.6	6.4	3.0	4.0	18.5	-0.5	11.4	11.8
High level WVVV	6037	6.1	6.9	3.4	4.5	16.4	2.1	14.2	12.1

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	15	5.7	5.8	0.6	1.8	40.5	1.1	11.5	10.4
Mid level CMV	9	7.1	7.1	0.2	5.8	12.4	2.7	17.6	14.9
High level CMV	64	5.7	5.9	1.2	4.8	10.4	-2.2	12.6	14.8
High level WVVV	135	6.9	7.5	2.2	5.1	16.2	-0.8	16.8	17.6

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	929	4.9	5.4	2.2	3.3	22.6	-0.3	8.4	8.8
Mid level CMV	834	5.8	6.6	2.9	4.0	13.5	-1.5	17.3	18.8
High level CMV	5602	5.9	6.8	3.3	4.2	16.9	-0.5	14.1	14.6
High level WVVV	7895	6.5	7.6	3.9	4.7	14.9	1.9	18.3	16.4

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.