

Kalpana-1 AMV: March 2017

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	230	5.2	5.5	1.6	3.4	24.0	-0.4	8.2	8.6
Mid level CMV	369	5.8	6.2	2.0	3.5	18.7	-0.7	14.1	14.8
High level CMV	579	7.3	8.0	3.0	5.0	13.1	-1.6	22.4	24.0
High level WVVV	1192	7.1	7.1	4.1	4.9	13.1	0.1	24.9	24.8

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	111	5.3	5.6	1.3	3.3	29.5	2.2	8.2	6.0
Mid level CMV	43	4.1	4.2	0.7	2.6	23.7	1.7	10.0	8.3
High level CMV	2756	5.9	6.7	3.1	4.0	19.1	-0.6	12.0	12.6
High level WVVV	3451	6.5	7.4	3.6	4.6	17.5	2.0	14.8	12.8

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	10	4.3	4.4	0.5	1.1	31.1	0.1	7.5	7.4
Mid level CMV	4	2.8	2.8	0.2	1.6	21.7	1.6	6.8	5.2
High level CMV	8	4.7	4.7	0.7	3.5	10.6	-0.1	13.3	13.3
High level WVVV	26	4.9	5.0	0.8	3.7	10.5	-2.6	12.5	15.1

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	351	5.2	5.6	1.9	3.3	24.6	0.0	8.1	8.1
Mid level CMV	416	5.6	6.1	2.1	3.3	19.7	-0.6	13.5	14.1
High level CMV	3343	6.1	7.0	3.3	4.2	18.1	-0.6	14.0	14.6
High level WVVV	4669	6.7	7.7	3.9	4.7	16.5	1.4	17.1	15.7

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.