

# December 2014

## 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	293	7.1	7.6	2.0	5.1	23.0	1.9	12.1	10.2
Mid level CMV	1704	8.1	9.5	4.7	6.2	15.8	0.1	18.3	18.2
High level CMV	1279	8.2	9.3	4.1	6.0	11.7	-2.4	23.4	25.8
High level WVWV	1934	9.6	9.6	5.1	7.0	13.4	-1.1	24.8	25.9

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	6.8	6.9	0.7	4.7	27.4	2.1	10.3	8.2
Mid level CMV	346	6.5	6.9	1.9	4.2	24.1	2.6	11.3	8.6
High level CMV	6142	6.1	6.9	3.2	4.1	19.5	0.3	12.2	11.8
High level WVWV	4249	6.6	7.4	3.3	4.5	20.5	0.8	13.0	12.2

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	9	4.7	4.7	0.2	3.3	29.6	1.4	8.9	7.5
Mid level CMV	17	8.5	8.6	0.6	4.9	33.5	0.8	13.2	12.3
High level CMV	59	16.6	17.2	2.4	13.1	29.1	-4.5	15.4	19.9
High level WVWV	65	13.4	13.7	1.8	10.7	27.7	-1.5	15.7	17.2

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	377	7.2	7.6	2.0	5.0	24.5	2.2	11.6	9.4
Mid level CMV	2067	7.7	9.1	4.6	5.8	16.9	0.7	17.3	16.6
High level CMV	7480	6.5	7.7	4.0	4.5	18.2	-0.2	14.2	14.4
High level WVWV	6248	7.6	8.9	4.5	5.3	18.7	0.2	16.4	16.1

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.