

# Kalpana-1 AMV: December 2015

## 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	958	4.4	5.0	2.3	3.0	22.2	-0.6	7.8	8.3
Mid level CMV	830	6.1	6.8	2.7	4.3	14.2	-1.7	16.8	18.5
High level CMV	611	6.7	7.4	2.9	4.7	10.1	-0.7	26.7	27.4
High level WVWV	1915	8.2	8.2	4.8	5.8	12.1	0.5	29.5	29.0

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	258	5.0	5.3	1.4	3.1	26.0	0.3	7.9	7.6
Mid level CMV	79	4.8	4.9	0.6	2.9	24.3	-0.4	8.6	9.0
High level CMV	3363	5.2	6.0	2.9	3.6	20.9	1.0	10.3	9.2
High level WVWV	4837	5.8	6.6	3.2	4.1	20.7	2.5	12.1	9.5

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	7	2.1	2.2	0.7	1.8	6.9	-0.9	7.2	8.1
Mid level CMV	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High level CMV	24	7.2	7.3	1.1	4.5	15.4	0.5	20.1	19.6
High level WVWV	35	9.5	9.8	1.5	5.2	20.6	2.3	20.6	18.4

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	1223	4.6	5.2	2.4	3.1	22.4	-0.5	7.9	8.4
Mid level CMV	909	6.0	6.6	2.7	4.2	15.3	-1.6	15.9	17.5
High level CMV	3998	5.5	6.5	3.3	3.8	18.4	0.7	14.1	13.4
High level WVWV	6787	6.4	7.6	4.0	4.5	17.5	2.0	17.3	15.4

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  $\text{ms}^{-1}$ , 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.