

# Kalpana-1 AMV: MARCH 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	955	5.0	5.6	2.4	3.5	21.8	0.2	9.0	8.8
Mid level CMV	1729	6.0	6.8	3.1	4.1	15.0	-0.4	16.6	17.0
High level CMV	4433	7.7	9.0	4.6	5.4	11.6	0.2	26.3	26.2
High level WWV	8423	7.9	7.9	5.0	5.6	11.4	1.4	28.5	27.1

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	276	4.1	4.3	1.2	2.6	26.4	1.3	6.6	5.3
Mid level CMV	136	5.2	5.4	0.8	3.0	24.7	1.1	10.2	9.1
High level CMV	2849	4.8	5.5	2.7	3.1	20.8	0.1	10.2	10.1
High level WWV	4341	5.2	5.9	2.9	3.3	20.4	1.2	11.8	10.7

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	55	4.9	5.1	0.8	3.4	20.0	-0.7	8.7	9.3
Mid level CMV	24	4.0	4.1	0.4	2.6	15.6	1.2	10.8	9.6
High level CMV	270	6.4	6.8	1.9	4.5	12.3	-0.3	21.5	21.7
High level WWV	572	7.1	7.7	2.7	5.1	14.3	0.5	20.9	20.4

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	1286	4.8	5.4	2.5	3.2	22.9	0.4	8.4	8.0
Mid level CMV	1889	5.9	6.7	3.1	4.0	15.4	-0.2	16.1	16.3
High level CMV	7552	6.6	7.9	4.3	4.5	15.1	0.1	19.9	19.8
High level WWV	13336	6.9	8.3	4.6	4.8	14.5	1.3	22.4	21.2

**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.**