

# INSAT-3D AMVs: September 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 IRW	2363	3.3	3.7	1.7	2.1	22.4	0.0	6.3	6.3
Mid level IRW	1645	4.2	4.8	2.1	2.9	14.1	-1.1	11.8	12.8
High level IRW	4657	5.3	6.1	3.0	3.6	14.5	-0.5	16.3	16.8
High level WVV	15846	4.9	5.6	2.9	3.2	13.6	0.0	15.3	15.3

Tropics	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level IRW	528	3.8	4.0	1.3	2.5	25.0	0.0	6.0	6.1
Mid level IRW	264	3.2	3.3	0.7	2.0	20.4	0.5	7.2	6.7
High level IRW	5555	4.5	5.0	2.3	3.1	14.8	0.4	11.5	11.1
High level WVV	8426	4.6	5.2	2.3	3.1	15.3	1.1	12.4	11.3

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 IRW	30	3.0	3.1	0.4	1.8	17.0	-0.5	7.1	7.6
Mid level IRW	19	3.6	3.6	0.4	2.0	16.8	-0.7	13.0	13.6
High level IRW	49	5.1	5.2	0.8	3.0	13.4	1.1	19.8	18.7
High level WVV	213	5.8	6.3	2.0	3.4	15.0	-0.2	18.3	18.5

Global	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level IRW	2921	3.3	3.8	1.8	2.2	22.3	-0.1	6.3	6.3
Mid level IRW	1928	4.1	4.6	2.1	2.8	14.6	-0.9	11.2	12.1
High level IRW	10261	4.8	5.6	2.8	3.4	14.3	0.0	13.9	13.9
High level WVV	24485	4.8	5.6	2.8	3.2	14.0	0.4	14.5	14.1

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 as a criteria for collocation.