

# INSAT-3D AMVs: September 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 IRW	2115	3.5	4.0	1.8	2.4	22.0	-0.1	6.3	6.4
Mid level IRW	1256	4.0	4.6	2.0	2.8	17.7	-0.9	9.3	10.2
High level IRW	3354	4.5	5.2	2.5	3.1	16.5	-0.5	14.7	15.1
High level WVV	10078	4.7	5.4	2.7	3.2	13.9	-0.2	16.2	16.4

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	556	3.8	4.1	1.2	2.6	23.1	0.9	7.0	6.1
Mid level IRW	598	3.2	3.5	1.1	2.0	19.1	0.1	7.1	6.9
High level IRW	9015	4.3	4.9	2.3	3.0	14.3	0.0	11.7	11.7
High level WVV	10839	4.7	5.3	2.4	3.3	14.6	0.9	12.8	11.9

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	146	3.5	3.8	1.1	2.4	14.4	0.6	10.8	10.2
Mid level IRW	19	7.2	7.4	0.7	4.3	22.7	-3.4	18.8	22.3
High level IRW	10	5.4	5.5	0.5	3.1	17.2	-1.0	21.0	22.0
High level WVV	59	6.9	7.3	1.4	5.8	5.4	-1.2	31.6	32.8

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	2817	3.5	4.0	1.9	2.4	22.0	0.1	6.5	6.4
Mid level IRW	1873	3.9	4.5	2.1	2.7	17.6	-0.6	9.0	9.6
High level IRW	12379	4.3	5.0	2.4	3.0	14.8	-0.2	12.4	12.5
High level WVV	20976	4.6	5.3	2.6	3.2	14.3	0.3	14.3	14.0

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.