

INSAT-3D AMVs: April 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	1642	3.8	4.3	1.9	2.5	19.5	-0.5	7.1	7.6
Mid level IRW	2247	4.6	5.2	2.3	3.2	14.8	-1.2	13.5	14.7
High level IRW	3278	5.2	5.9	2.7	3.5	9.8	-0.6	22.5	23.1
High level WVV	6489	5.5	6.3	3.1	3.5	11.1	0.3	22.9	22.6

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	585	3.8	4.1	1.4	2.7	25.3	0.9	5.8	4.9
Mid level IRW	353	3.2	3.5	1.0	2.2	19.4	-0.8	6.1	7.0
High level IRW	9459	3.7	4.3	2.1	2.5	18.9	0.2	8.5	8.3
High level WVV	13139	4.2	4.8	2.3	2.8	17.0	0.5	11.2	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 IRW	55	4.1	4.3	0.9	1.7	32.5	0.3	6.4	6.1
Mid level IRW	49	4.7	4.8	0.9	3.1	17.4	-2.1	12.8	14.9
High level IRW	30	5.0	5.1	0.9	3.9	14.8	0.6	17.6	16.9
High level WVV	97	4.6	4.9	1.1	3.1	13.8	-0.4	15.2	15.5

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	2282	3.7	4.2	1.9	2.5	21.1	0.0	6.7	6.7
Mid level IRW	2649	4.4	5.0	2.4	3.0	15.5	-1.1	12.4	13.5
High level IRW	12767	4.1	4.7	2.4	2.7	16.5	0.0	12.0	12.0
High level WVV	19725	4.6	5.3	2.7	3.0	15.1	0.4	14.9	14.4

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 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 30ms^{-1} and direction difference greater than 60° are screened out.
- Quality indicator is not used as a criteria for collocation.