

INSAT-3D AMVs: APRIL2016

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	1854	3.7	4.2	1.8	2.5	19.2	-0.2	7.8	8.0
Mid level IRW	2676	4.3	4.9	2.3	3.0	11.4	-0.5	15.0	15.5
High level IRW	6635	5.1	5.9	3.0	3.4	9.6	0.2	22.1	22.0
High level WWV	16404	5.1	5.9	3.0	3.4	10.1	0.3	21.4	21.1

Tropics	No of Collocation	MVD	RMSVD	SD	Mean Speed Dif (ABS)	Mean Dir Dif (ABS)	Bias	Mean Speed AMV	Mean Speed RS
Low level IRW	1174	3.3	3.6	1.4	2.1	24.1	0.1	5.3	5.2
Mid level IRW	432	3.2	3.4	1.0	2.3	16.6	0.6	8.1	7.6
High level IRW	8592	3.6	4.1	1.9	2.3	16.7	0.2	9.3	9.2
High level WWV	13082	4.0	4.5	2.0	2.5	17.3	0.4	10.4	10.0

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	88	4.0	4.1	0.7	3.2	11.2	2.1	12.8	10.8
Mid level IRW	35	3.5	3.7	0.8	2.2	13.3	2.0	16.1	14.0
High level IRW	93	6.1	6.4	1.5	3.3	17.6	1.0	18.0	17.0
High level WWV	291	5.8	6.1	1.4	4.2	10.5	-0.5	21.6	22.1

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	3116	3.5	4.0	1.9	2.4	20.9	0.0	6.9	6.9
Mid level IRW	3143	4.1	4.7	2.3	2.8	12.2	-0.5	14.0	14.5
High level IRW	15320	4.3	5.0	2.6	2.8	13.0	0.1	15.4	15.2
High level WWV	29777	4.6	5.4	2.7	3.0	12.9	0.3	16.7	16.4

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.**