

INSAT-3D AMVs: May 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 | 1930 | 4.0 | 4.4 | 2.0 | 2.7 | 21.7 | 0.2 | 7.2 | 7.0 |
| Mid level IRW | 2175 | 4.6 | 5.4 | 2.6 | 3.2 | 14.6 | -0.4 | 12.7 | 13.1 |
| High level IRW | 6629 | 5.7 | 6.5 | 3.2 | 3.8 | 13.4 | -0.5 | 17.9 | 18.4 |
| High level WVV | 15571 | 6.5 | 7.5 | 3.8 | 4.2 | 14.2 | 0.4 | 19.6 | 19.2 |

| 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 | 644 | 3.3 | 3.6 | 1.3 | 2.3 | 25.3 | 0.6 | 5.3 | 4.7 |
| Mid level IRW | 256 | 3.6 | 3.7 | 0.6 | 2.2 | 23.2 | 0.8 | 7.1 | 6.3 |
| High level IRW | 5848 | 3.7 | 4.2 | 2.0 | 2.5 | 15.7 | 0.4 | 9.3 | 8.8 |
| High level WVV | 10003 | 4.2 | 4.7 | 2.2 | 2.8 | 18.1 | 0.9 | 9.8 | 8.9 |

| 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 | 51 | 3.9 | 3.9 | 0.5 | 2.7 | 25.8 | -0.4 | 5.8 | 6.2 |
| Mid level IRW | 31 | 3.7 | 3.8 | 0.7 | 1.7 | 18.0 | -0.6 | 9.6 | 10.2 |
| High level IRW | 6 | 3.6 | 4.4 | 2.5 | 0.7 | 8.3 | 0.5 | 28.0 | 27.4 |
| High level WVV | 130 | 7.0 | 7.3 | 1.8 | 5.1 | 16.3 | 0.0 | 20.8 | 20.9 |

| 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 | 2625 | 3.8 | 4.3 | 1.9 | 2.5 | 22.6 | 0.3 | 6.7 | 6.4 |
| Mid level IRW | 2462 | 4.5 | 5.2 | 2.6 | 3.0 | 15.2 | -0.2 | 11.9 | 12.1 |
| High level IRW | 12483 | 4.7 | 5.6 | 2.9 | 3.2 | 14.2 | -0.1 | 14.1 | 14.1 |
| High level WVV | 25704 | 5.6 | 6.6 | 3.5 | 3.6 | 15.8 | 0.6 | 15.7 | 15.1 |

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 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 for the current validation.