MMS measurement comparison on WB-57 and ER-2

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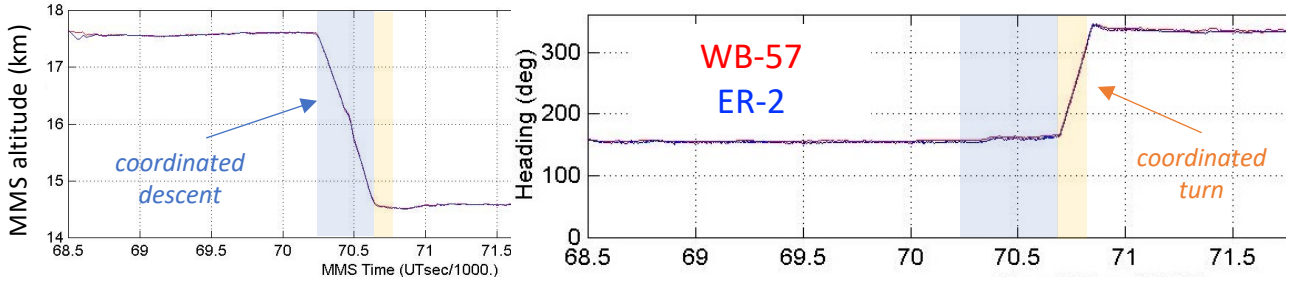
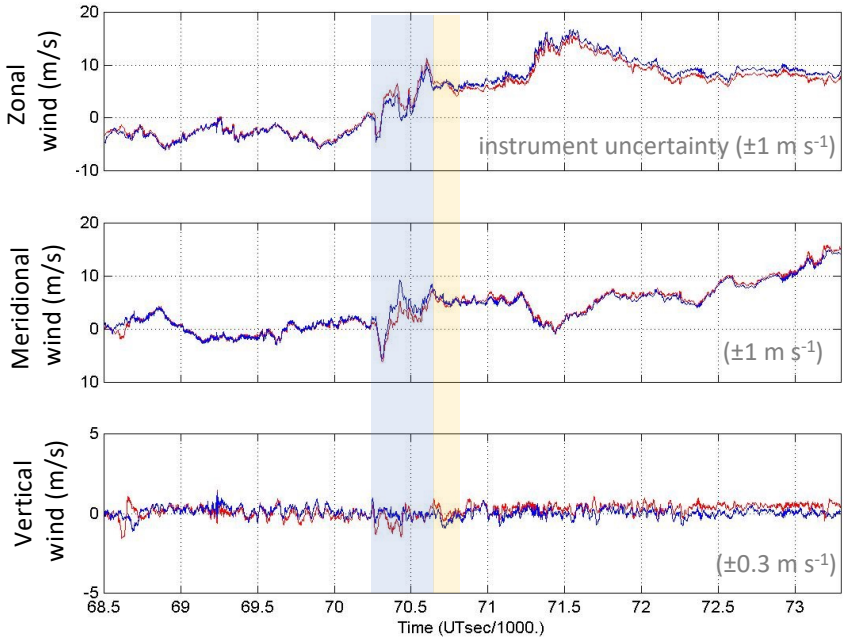
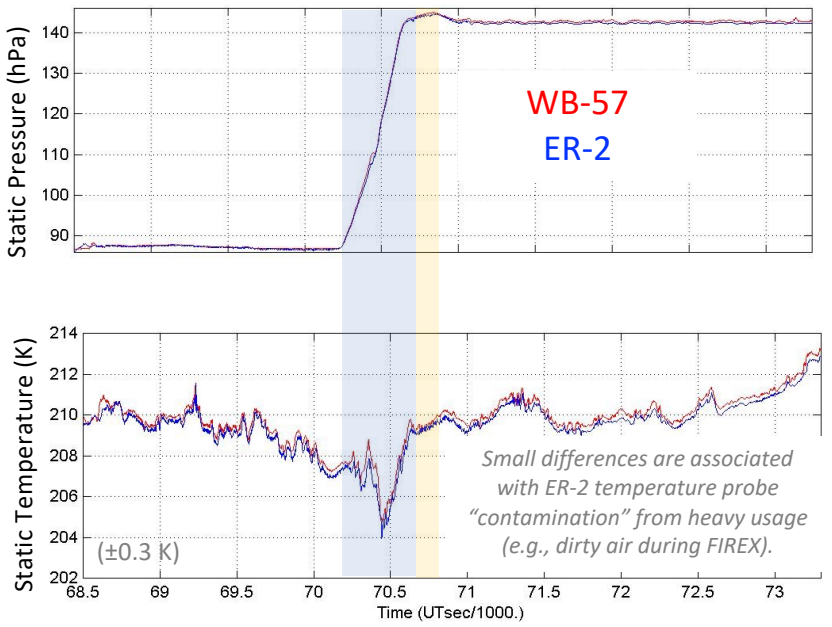
Intercomparison details

- Meteorological Measurement System (MMS) measurements from NASA WB-57 and ER-2 during wingtip-to-wingtip flight segment on 17 Aug 2021
- Aircraft performed a coordinated descent from 17.6 to 4.6 km altitude (blue), followed by a coordinated turn (yellow) during a total period of ~1.3 hr.



MMS flow angle and attitude measurements are used to calibrate the meteorological data, all to within measurement uncertainties (brackets).





Results

- MMS measurements on the two aircraft agree remarkably well (even during the descent and turn), increasing confidence in measurement accuracy and precision.
- WB-57 pressure altitude discrepancy, suspected in past campaigns, was confirmed and quantified.
- These results are consistent with the 2002 intercomparison results, although with different aerodynamic flow field associated with a different ER-2 nose cone.