Kessler 2/12/16

Afternoon Flights

UTC = local time + 6hrs

Flights conducted 15-20 yards away from the Washington Mesonet Tower

Battery 1

12.51V to start

Flight 1

19:11 UTC

Facing west (270°) on take off

Flew to 10m

Rotated 90° west to face south (180°) after reaching 10m

Adjusting height and orientation more than normal

19:14 UTC manually landed

Flight 2

19:18 UTC take off

Facing 030° into the wind with iMet 6 facing into the Sun

Hovered at 10m

Automatically adjusting altitude a lot – gusty winds

19:23 UTC more settled flight period

19:27 UTC wind calmer

19:31 UTC landed with low battery

Remark: Noticeable change in rotor speed during a moment of calmer wind. Likely noticeable in flight data.

Battery 2

12:56V to start

Flight 3

19:48 UTC take off

Facing south (180°)

Hovering at 10m

Rotated 90° to face west (270°) after reaching 10m

19:50 UTC manually rotated to face south (180°) again

19:57 UTC wind gust

20:00 UTC automatic altitude drop and then returned to 10m hover

20:04 UTC wind increase

Yaw between 185° to 190°

20:05 UTC landed with low battery

Battery 3

12.60V to start

Flight 3

iMet 5 replaced by iMet 3

iMet 6 replaced by iMet 1

20:18 UTC battery connected

20:20 UTC take off

Facing south (180°)

20:22 UTC landed for new flight plan to be programmed

Flight 4 – planned to climb to 10m, 60s hover, descend to 2m, 60s hover, ascend to 10m, repeat.

20:35 UTC take off

Facing south (180°)

Ascended to 10m

Rotated 180° to face north (360°)

20:41 UTC rotated 180° to the south

20:42 UTC rotated 90° to east and descended to 2m

20:43 UTC rotated ~150° to face the northwest and climbed to 10m

20:44 UTC rotated due north and descended to 2m

20:46 UTC switched to manual control of UAV and climbed to 10m

20:48 UTC descended to 2m

20:49 UTC landed with low battery

Remark: programmed UAV to hover at 2m but in reality it only hovered a few feet off the ground very close to long grass. How accurate is the 10m hover above the ground?

Next time: note time when each new battery is connected

Front

Back

iMet 5

(later replaced by iMet 3)

Windsonde 248

Windsonde 249

iMet 6

(later replaced by iMet 1)

Windsonde 248 and iMet 5 (then 3) located below rotors on the bottom of the UAV arms.

Windsonde 249 and iMet 6 (then 1) located away from the rotors on the ends of the booms. iMet 6 and 1 shielded with polystyrene funnel.





