



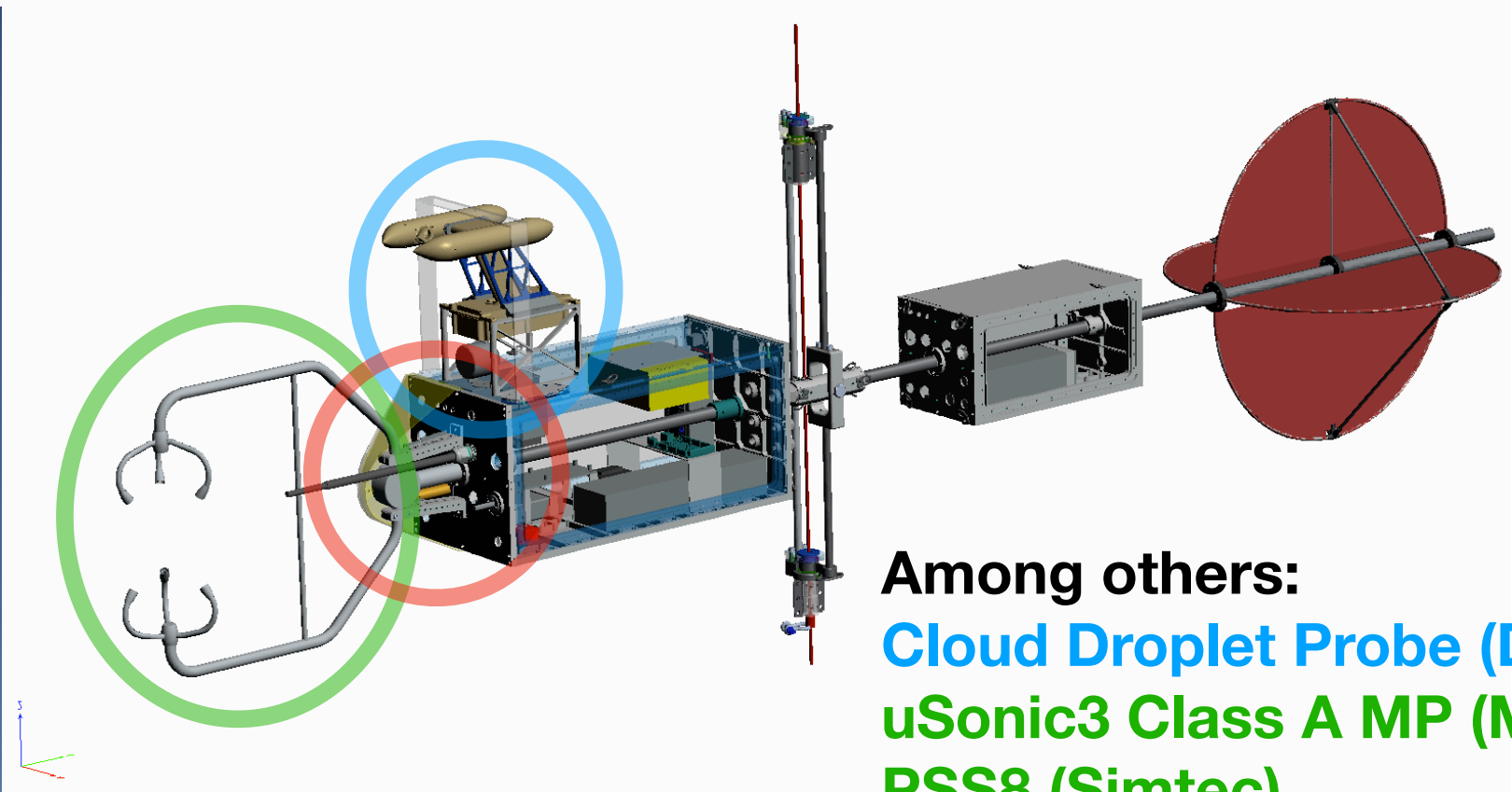
Airborne Atmospheric Measurements with the mini Max Planck CloudKite



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Mini-MPCK on RV Meteor



Among others:

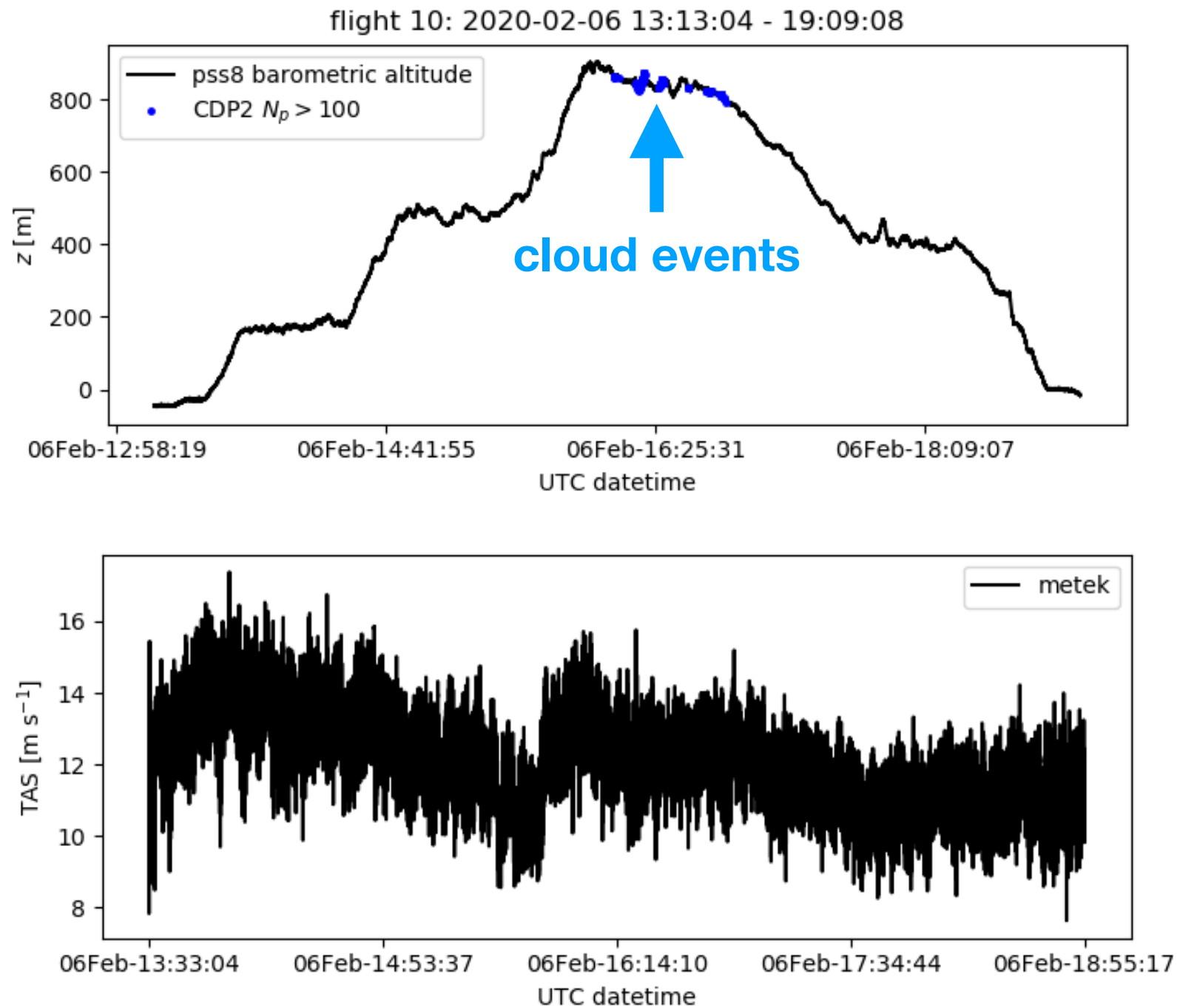
Cloud Droplet Probe (DMT)
uSonic3 Class A MP (Metek)
PSS8 (Simtec)
miniCTA (Dantec)
HMP7 (Vaisala)
AM2315 (AOSONG)

- Measurements over **entire diurnal cycle** possible
- **Variety of flight patterns** (staircase, sounding, constant altitude)

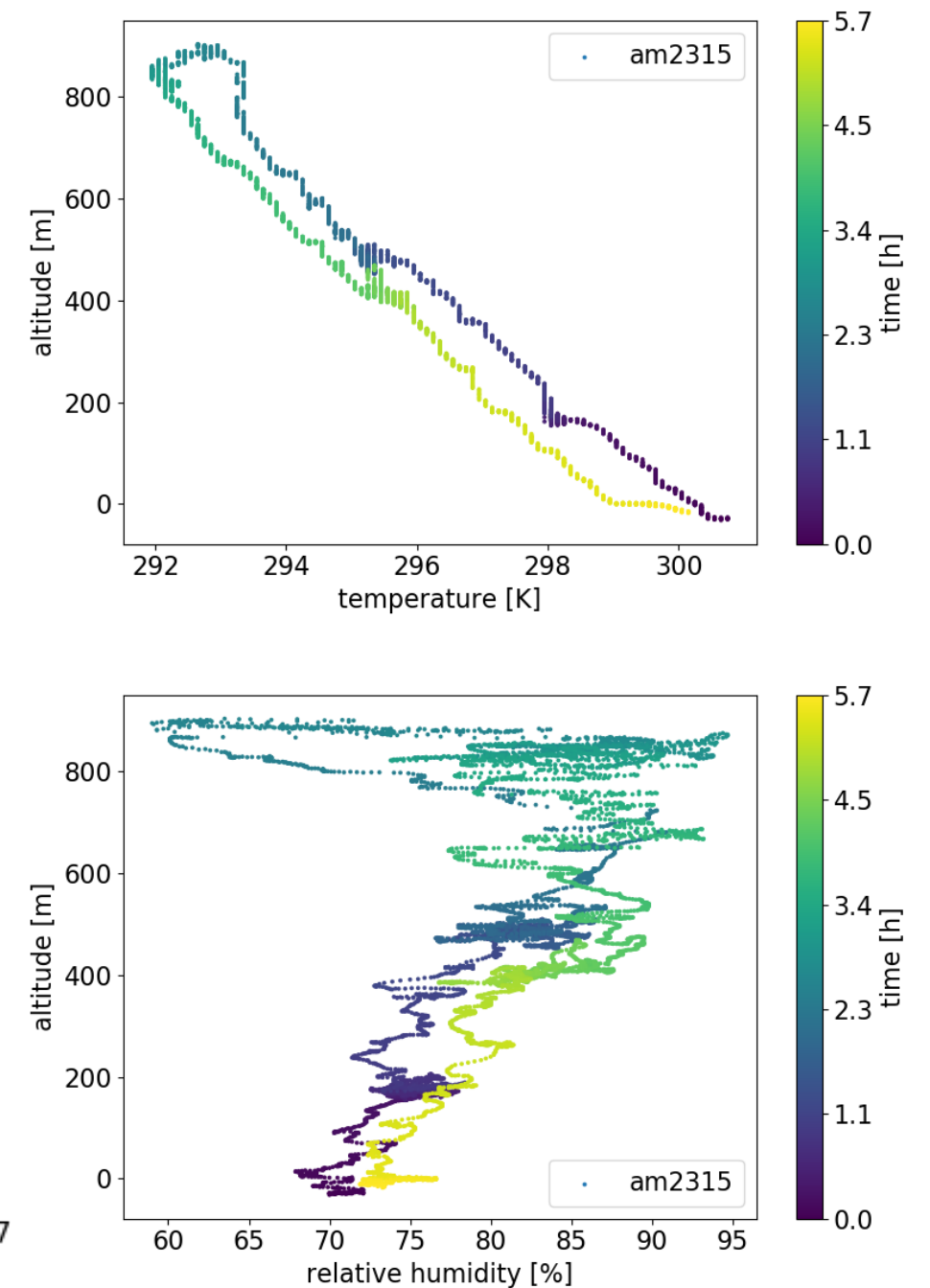
- **68 h** of data record during **12 flights**
- Longest flight duration: **15 h 30 min**
- Spatial resolution of wind measurements: **< 0.3 m @ 10m/s**

Overview - Flight 10

Flight pattern and True Air Speed (TAS)



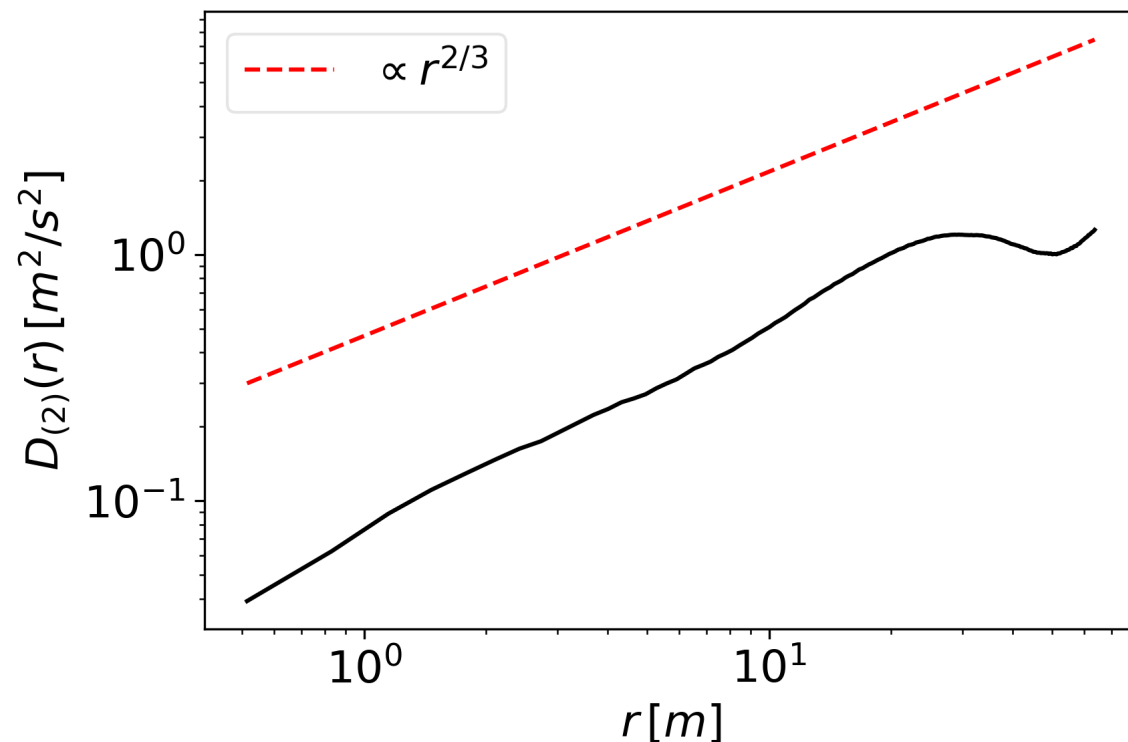
Temperature and Rel. Humidity



Preliminary Results

Structure function

$$D_{(n)}(r) = \langle (u(x+r) - u(x))^n \rangle \sim (\epsilon r)^{n/3}$$



TAS not corrected for platform motion

$$f_{sample} = 30 s^{-1}$$

$$\epsilon \sim 1 \times 10^{-3} m^2 s^{-3} \text{ to } 1 \times 10^{-2} m^2 s^{-3}$$

**Thanks a lot to the entire staff
of **MPIDS** and **RV Meteor**!**

Statistics on individual clouds

