

Carbon project-atmosphere group

**“BL meteorology along route
of Galathea 3”**

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Outline

- What is a boundary layer and why is it important in a CO₂ context
- What are we doing onboard
- What are we looking for and why
- Interesting measurements from Coast of Namibia

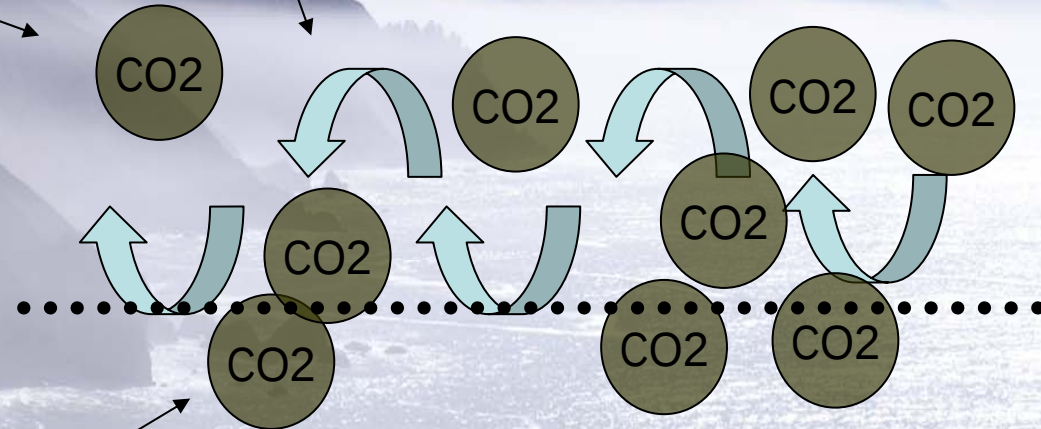
What is a boundary layer ?

Eddie/coherent structure mixing

Mixing height

Atmospheric
CO₂ gas

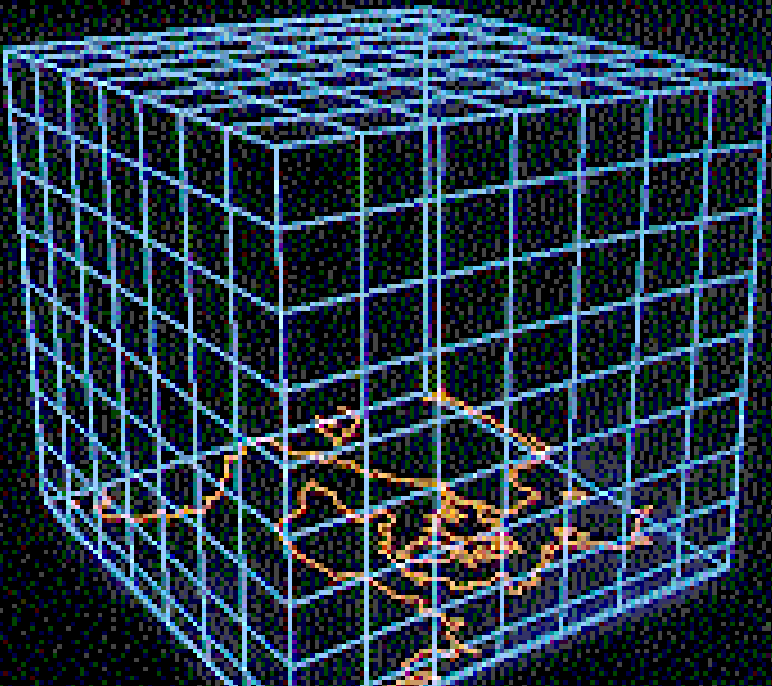
CO₂ gas
in the ocean surface



Goal:

- A better quantification of global air-sea exchange
- A better understanding of the processes that drive the air-sea exchange

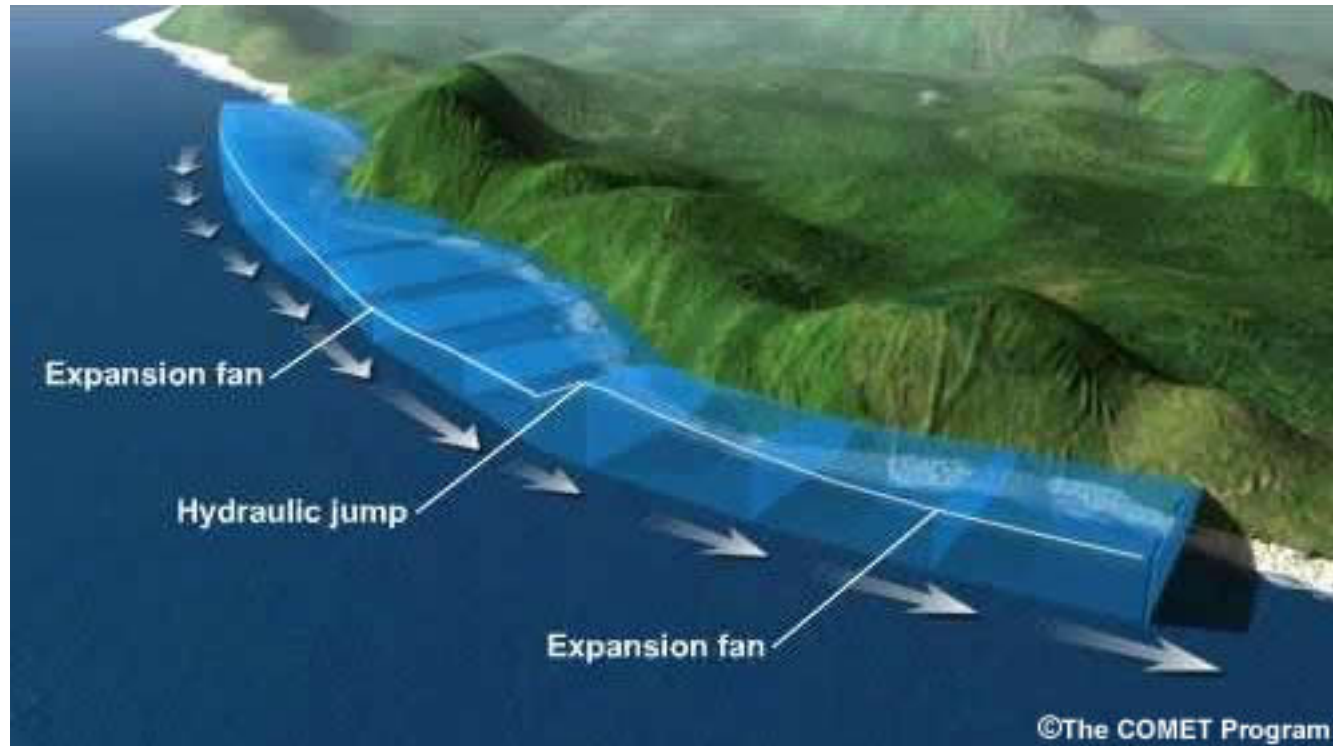
20 hertz sonics



Structures in the boundary layer top causes

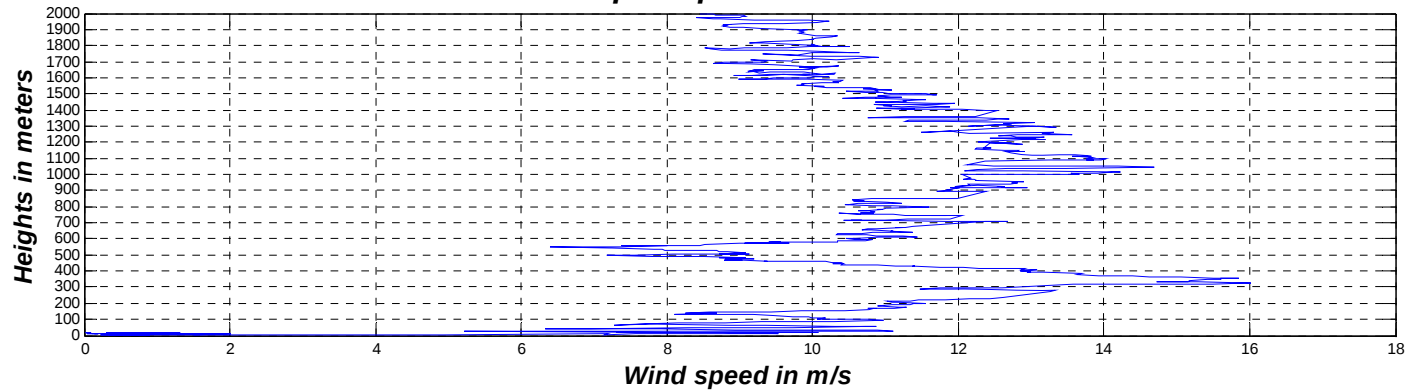
***Increase mixing and co₂ air sea exchange
and***

Cause a high degree of surface wind heterogeneity

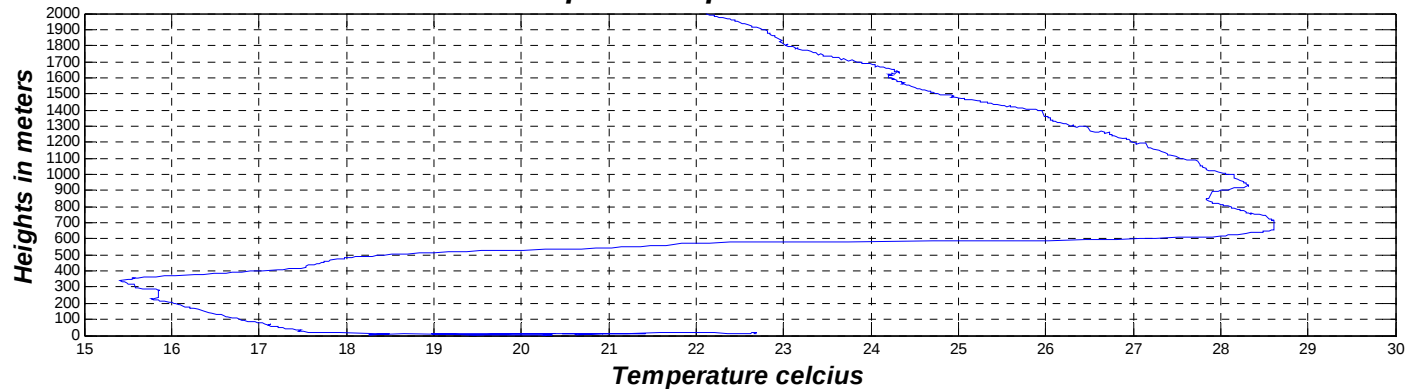


Observation of mixing structures from Accra to cape town

Wind speed profile 11 october

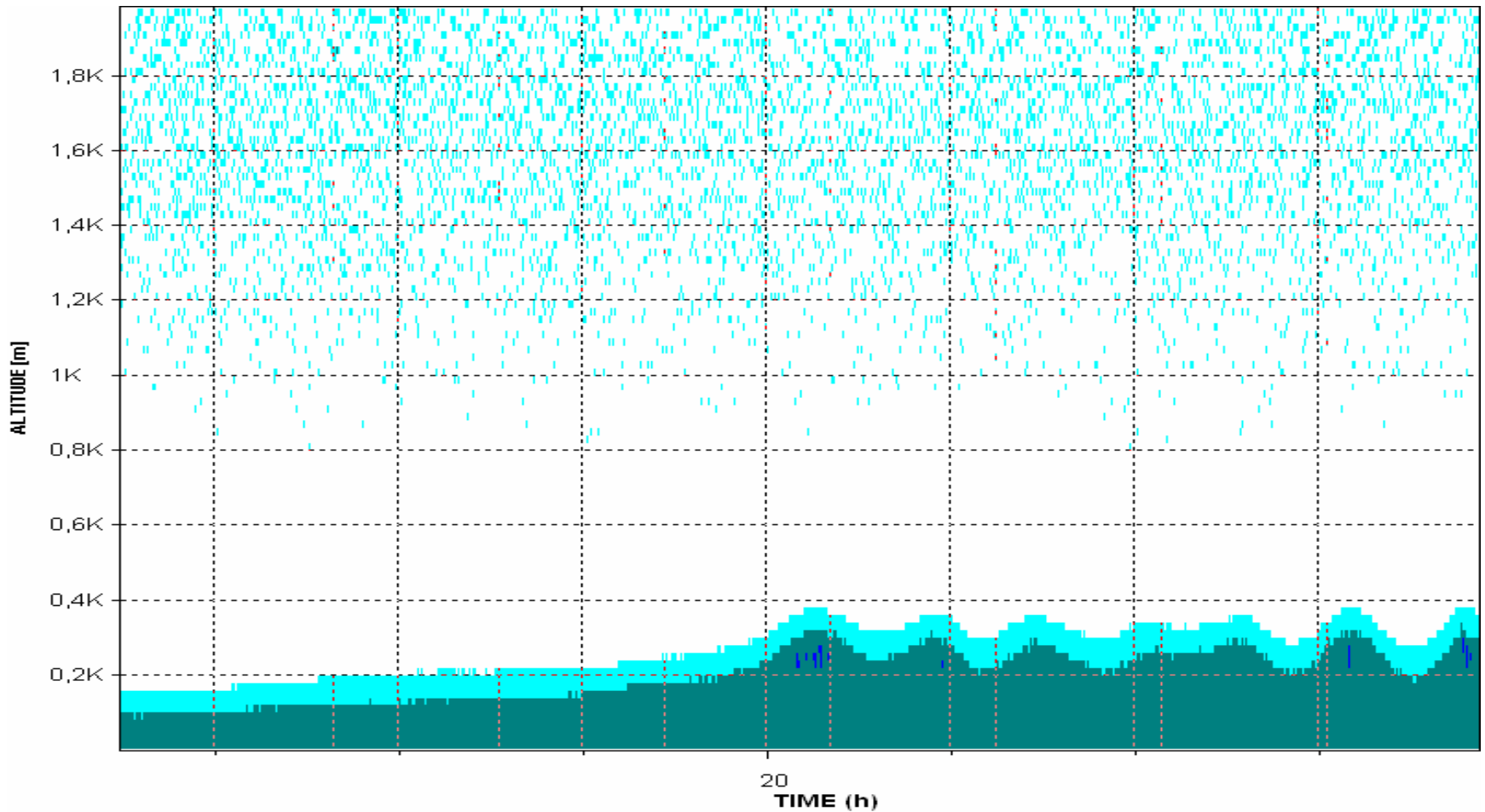


Temperature profile 11 october

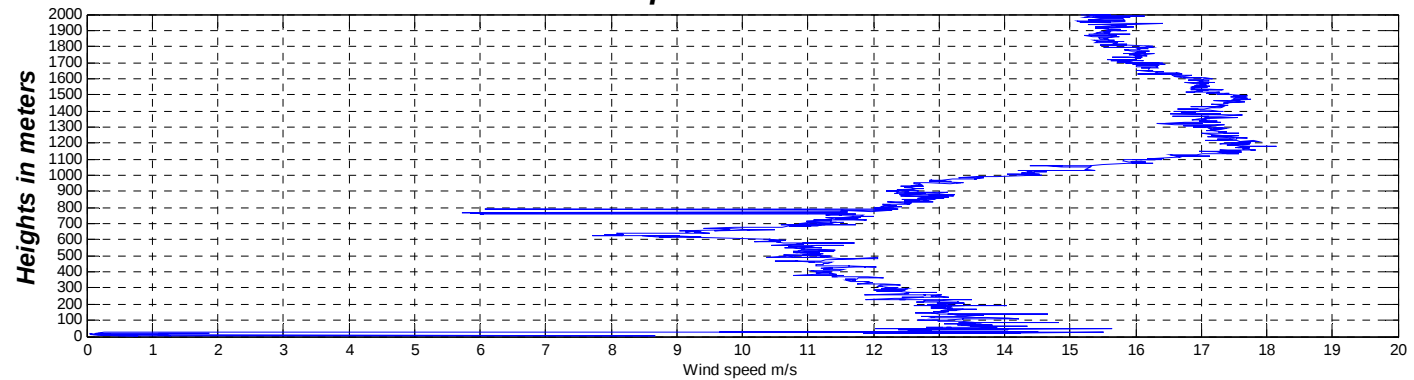


Gravity waves and no mixing

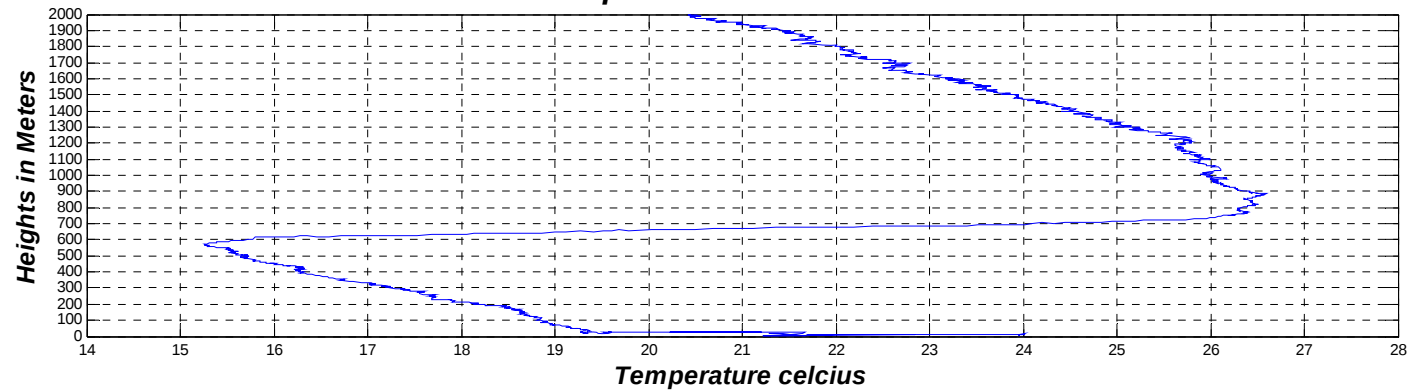
October 11



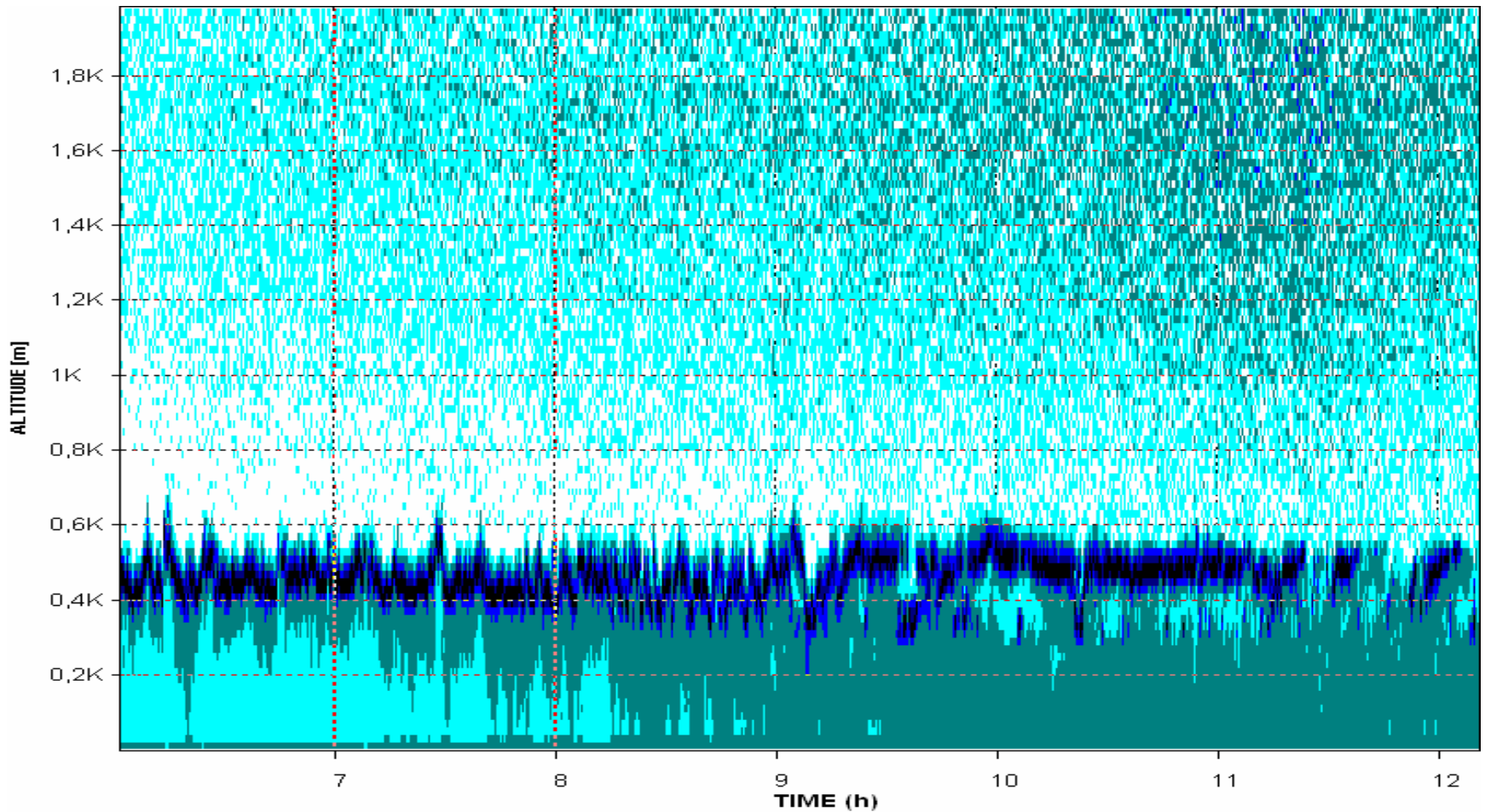
Wind speed Profile 10 oct



Temperature Profile 10 oct



Breaking gravity waves with mixing



- Seen a high degree of variety along the route
- Needed are a broader picture of how things looks on a larger scale
- Merete wil now carry on