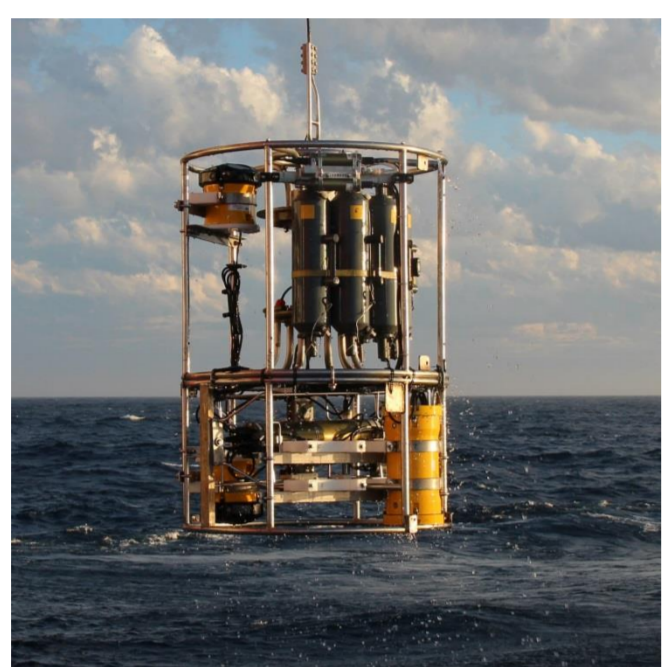


Introduction

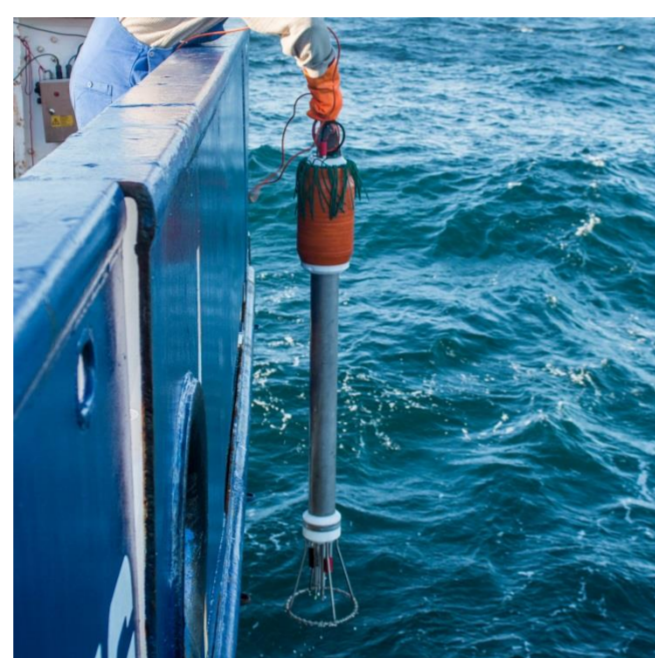
- **Objective:** Investigation of the vertical structure of filaments to estimate transports (e.g. of heat or nutrients)

- **Instruments:**



→ measures vertical profiles of salinity and temperature

Fig. 1: CTD



→ measures vertical profiles of turbulence

Fig. 2: MSS

- **Research area** is shown in Fig. 3. It illustrates the horizontal distribution of surface temperature on the day the section measurements were done. An exemplary section across a filament described below is shown as a blue line.

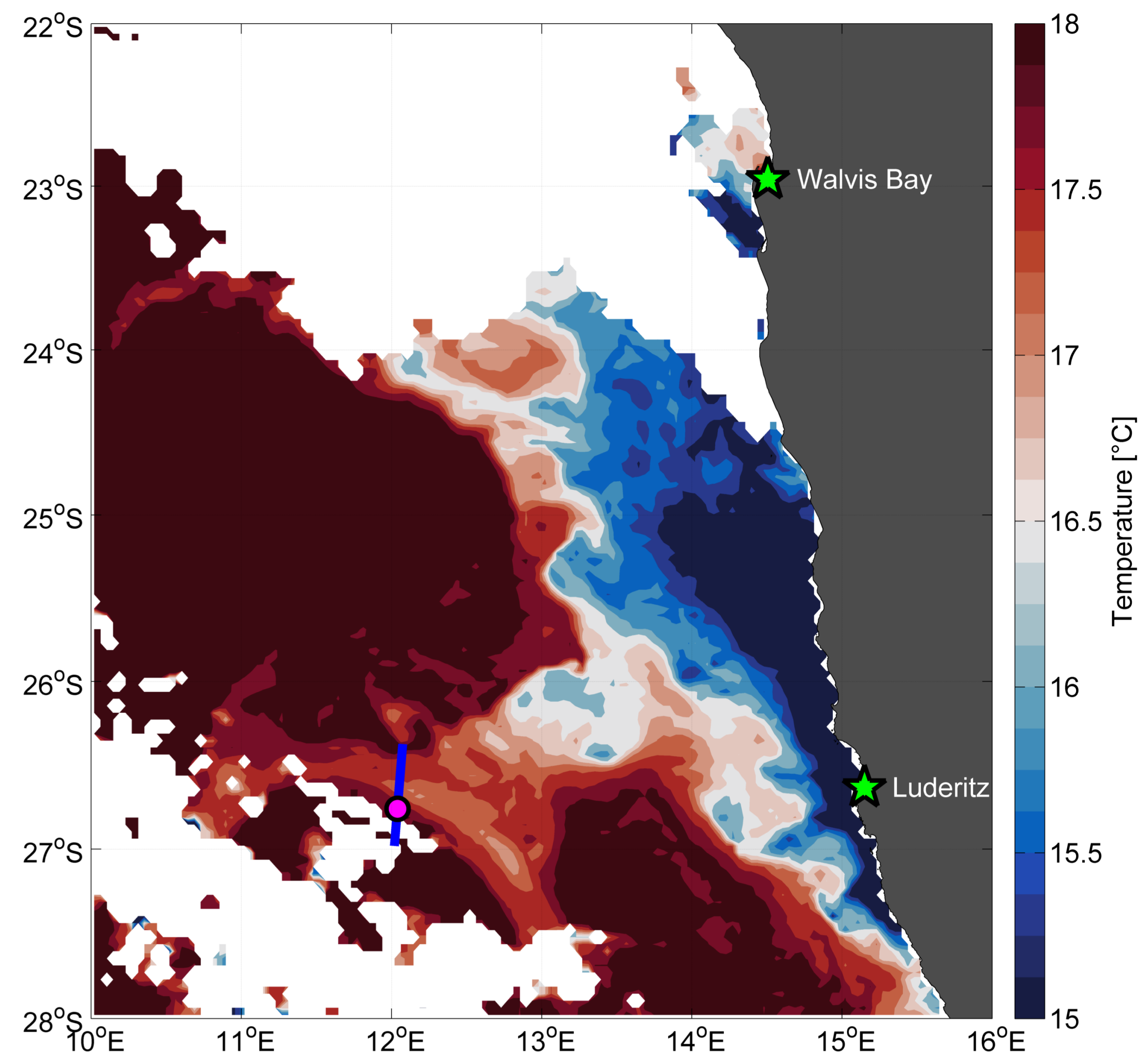
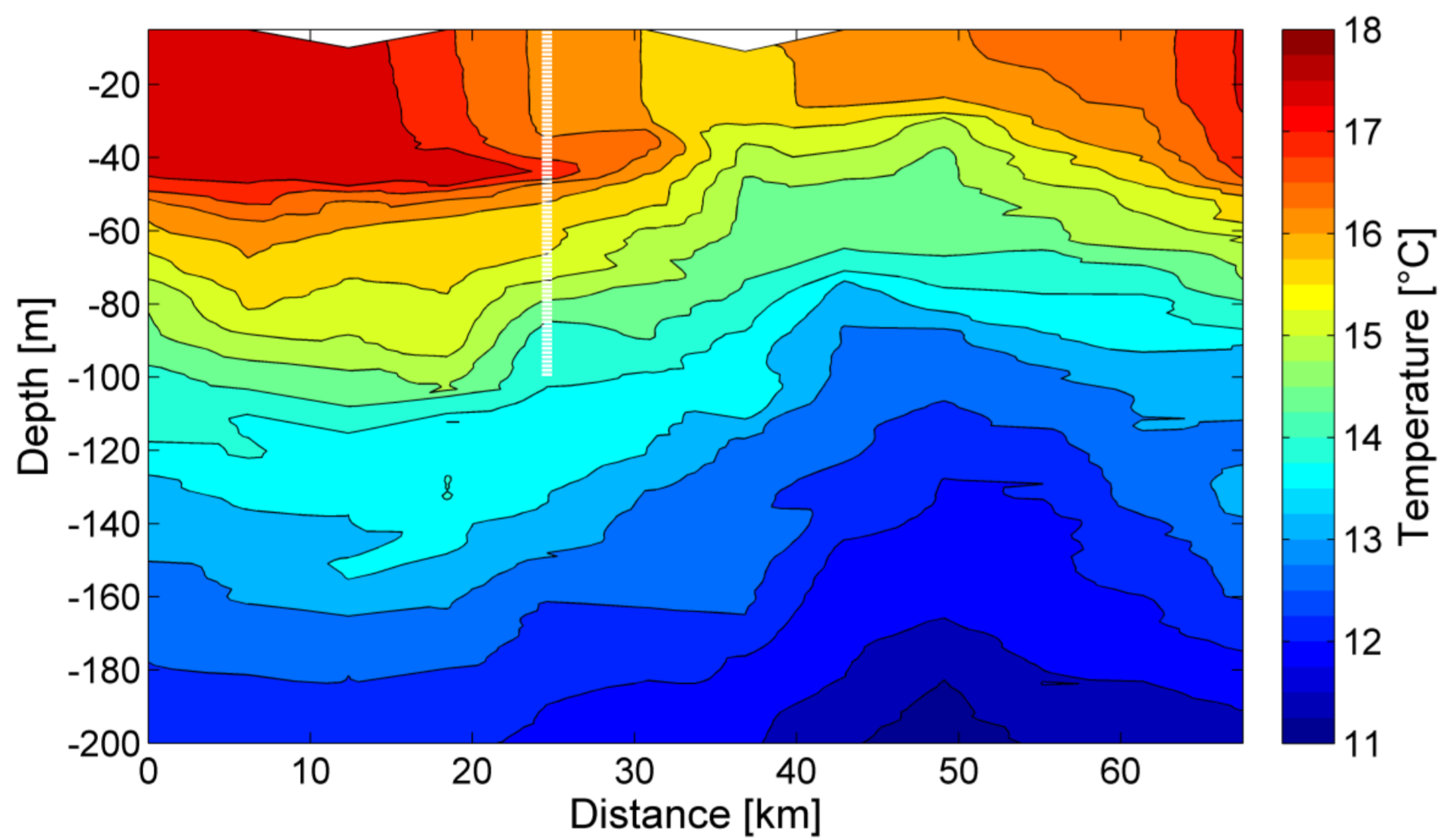


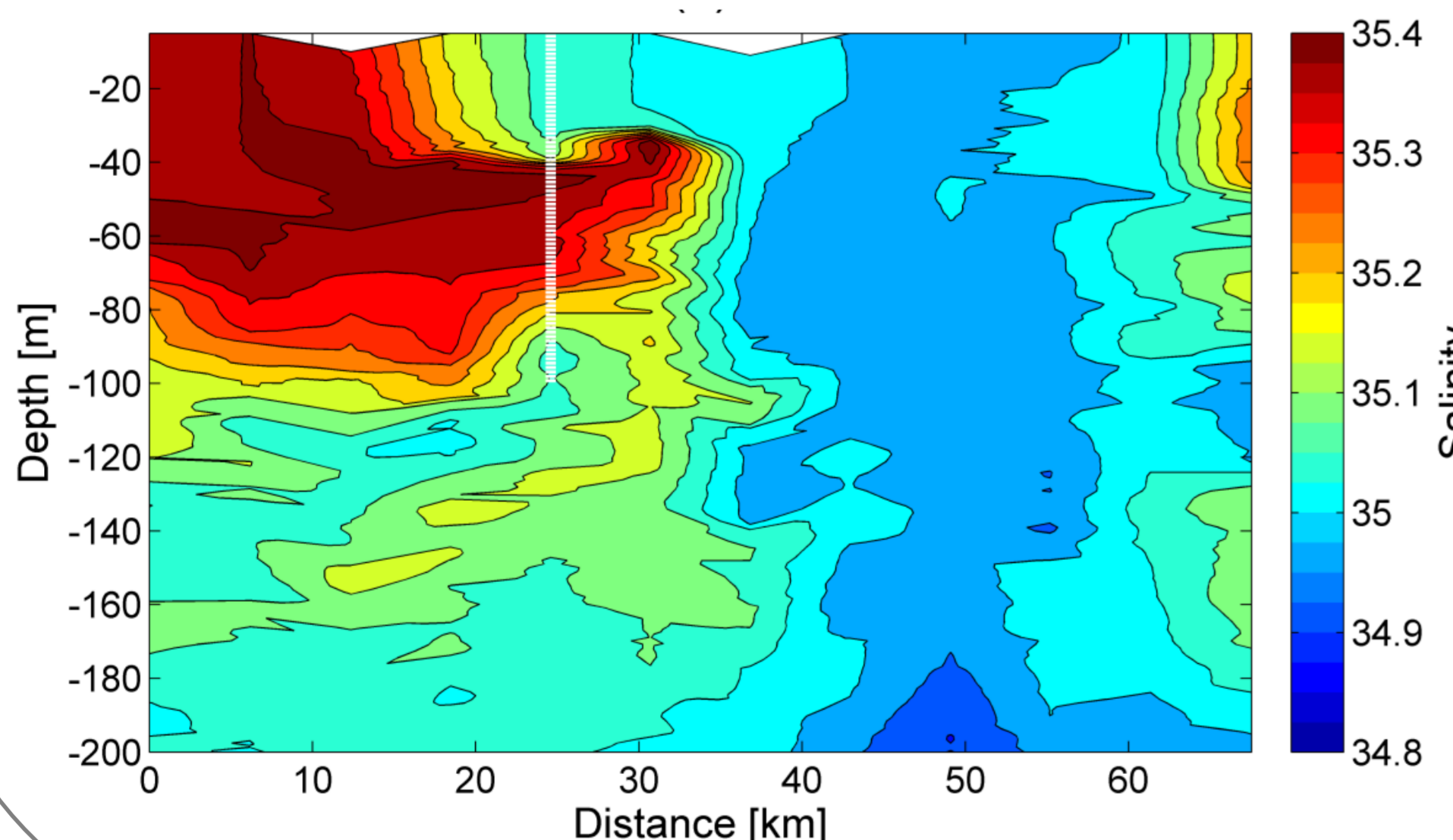
Fig. 3: Surface temperature of the research area, obtained from satellite data from 23. Nov 2016. White areas indicate clouds. The blue line illustrates the chosen CTD section, including the location (pink dot) of the turbulence profile described below.

Characteristics of the vertical structure



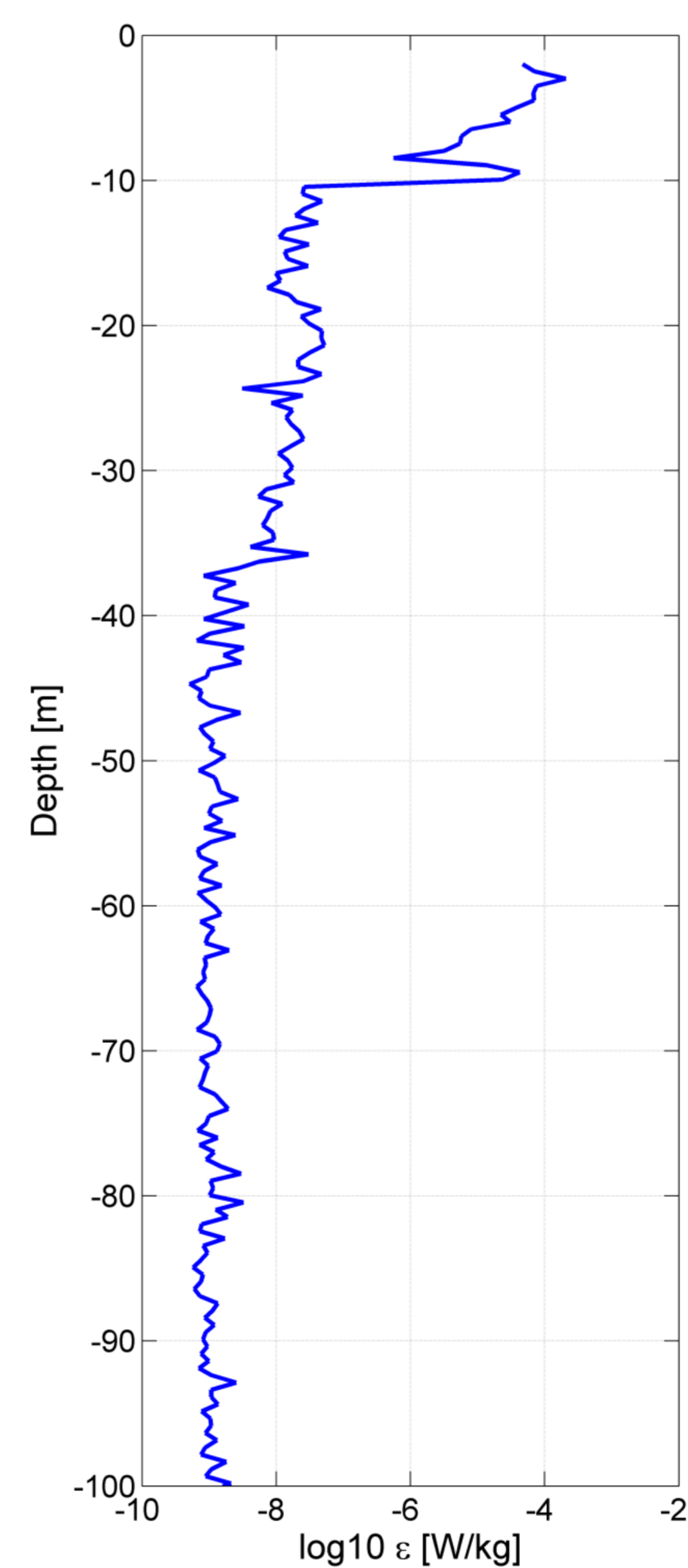
Temperature section

- The warm surface layer is interrupted by colder water at a distance of 20 to 65 km along the section → filament
- In all depths the filament water is colder than the surrounding water of the same depth



Salinity section

- The filament is visible with low salinity in all depths → due to the characteristics of a filament (see Poster 1)
- Outside the filament the surface layer has high salinity and lower salinity below it



Turbulence profile

- The shown dissipation rate indicates turbulence
- High turbulence in the upper 10m due to mixing by wind and waves
- Lower turbulence between 10 and 40m
- No turbulence below 40m

→ The filament is not only visible at the surface but also at larger depths with characteristically low values of temperature and salinity compared to the surrounding watermasses. Knowledge of this is important for transport estimates below the surface.