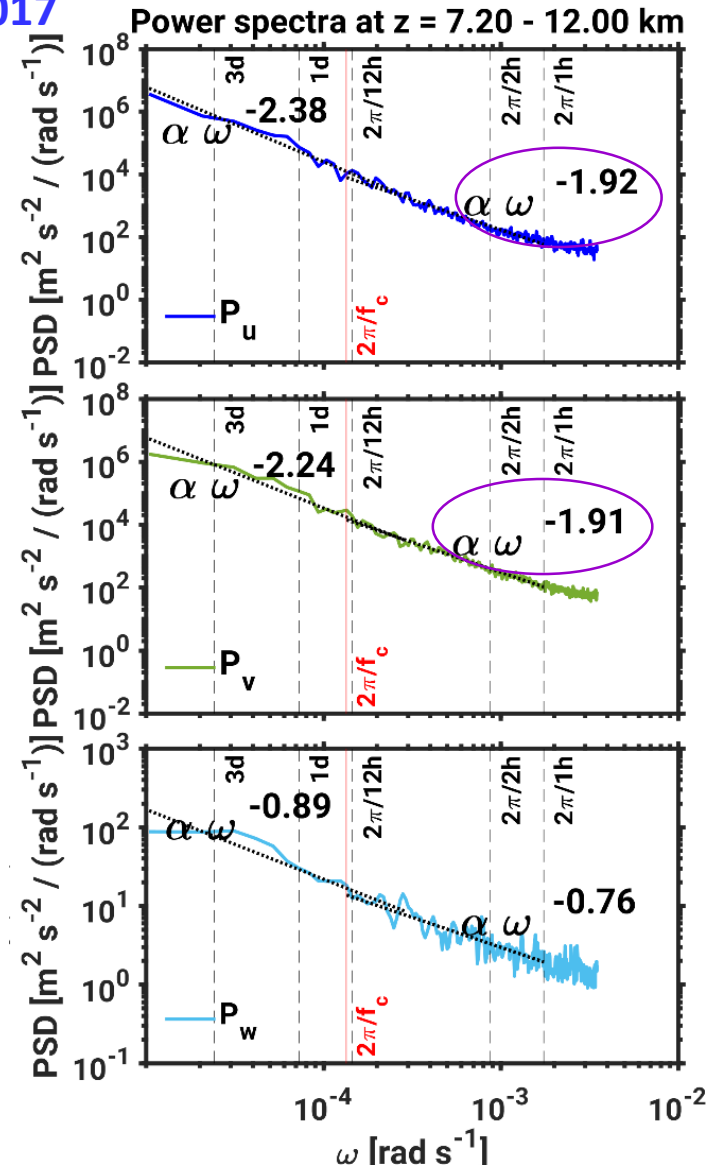
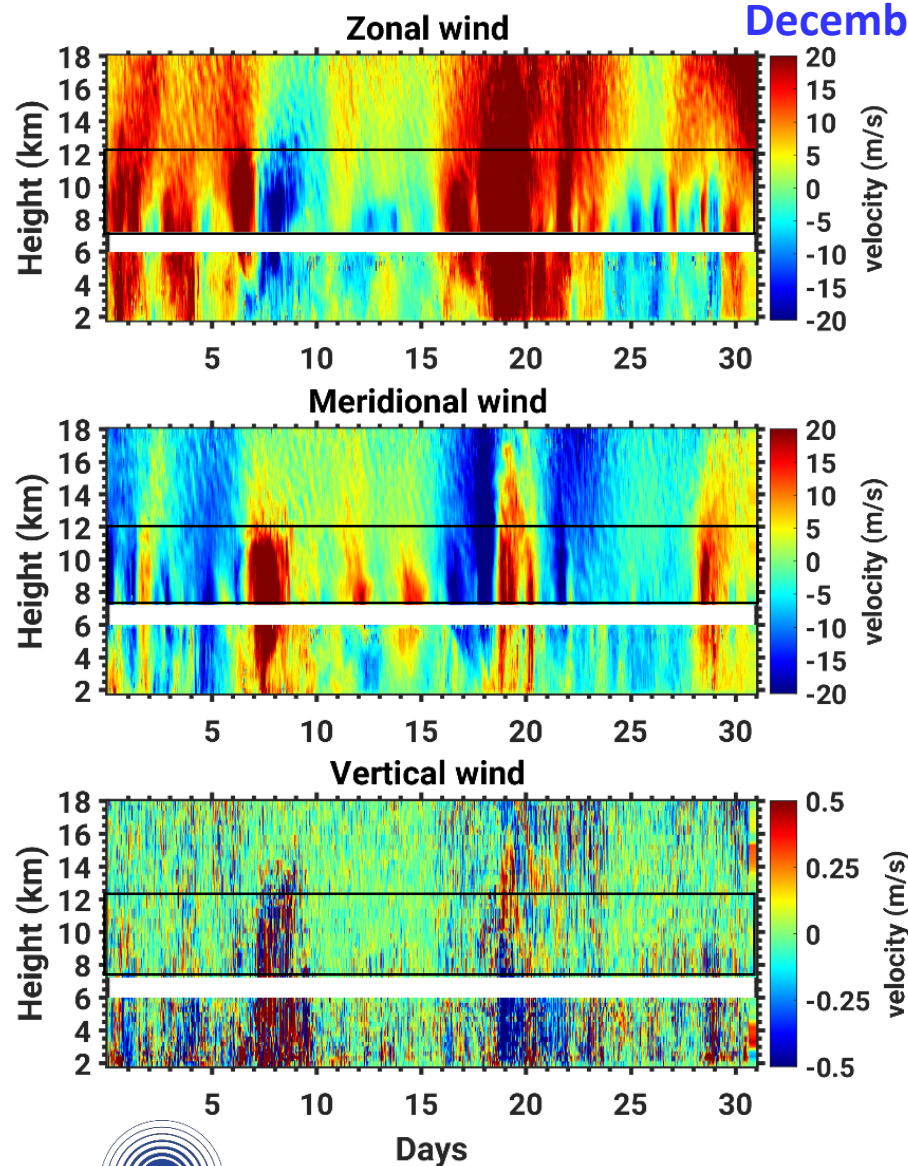


Example of winds and power spectra



**Inertial period over
Andøya ≈ 13 h**

**High-frequency:
below $(13 \text{ h})^{-1}$**

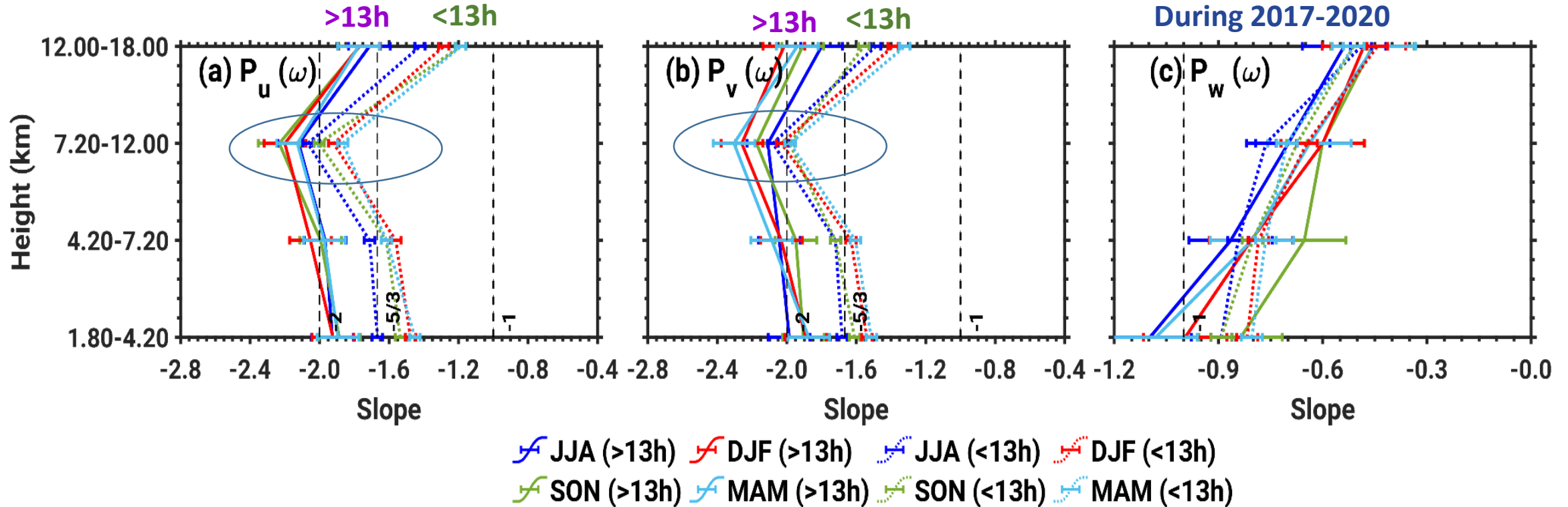
**Low-frequency:
above $(13 \text{ h})^{-1}$**

To quantify the power laws, we perform a least-square fit (LSF) according to

$$Y = \alpha + \beta X,$$

where $Y = \ln(P)$ and $X = \ln(\omega)$, respectively.

Altitudinal and seasonal variation of power spectral density slopes



JJA: Jun., Jul., Aug. (Summer)

SON: Sep., Oct., Nov. (Autumn)

DJF: Dec., Jan., Feb. (Winter)

MAM: Mar., Apr. May (Spring)

- The frequency power spectral slopes for $P_u(\omega)$ and $P_v(\omega)$ are ~ -2 in the **low-frequency range (> 13 hour)** and around $-5/3$ in the **high-frequency range (< 13 hour)**.
- The slopes are **shallower than -1** for $P_w(\omega)$.