

Effects of topography variations on wind speed and direction

Objective of our study:

- Goal: investigate how elevation and topography differences affect wind direction and wind speed.
- Anemometers gathered data.
- Hypothesis: *The wind speed and direction will be higher and the direction more constant at the top of Ulriken, and more turbulent and slow near the bottom of Ulriken.*

Results:

- Wind speed increased with elevation.
- Wind direction was more stable at higher elevations and less stable at the bottom.
- These results support our hypothesis.

Conclusion:

- The wind speed increased with elevation, and the wind direction was more consistent at higher elevation due to reduced surface friction and more exposure.

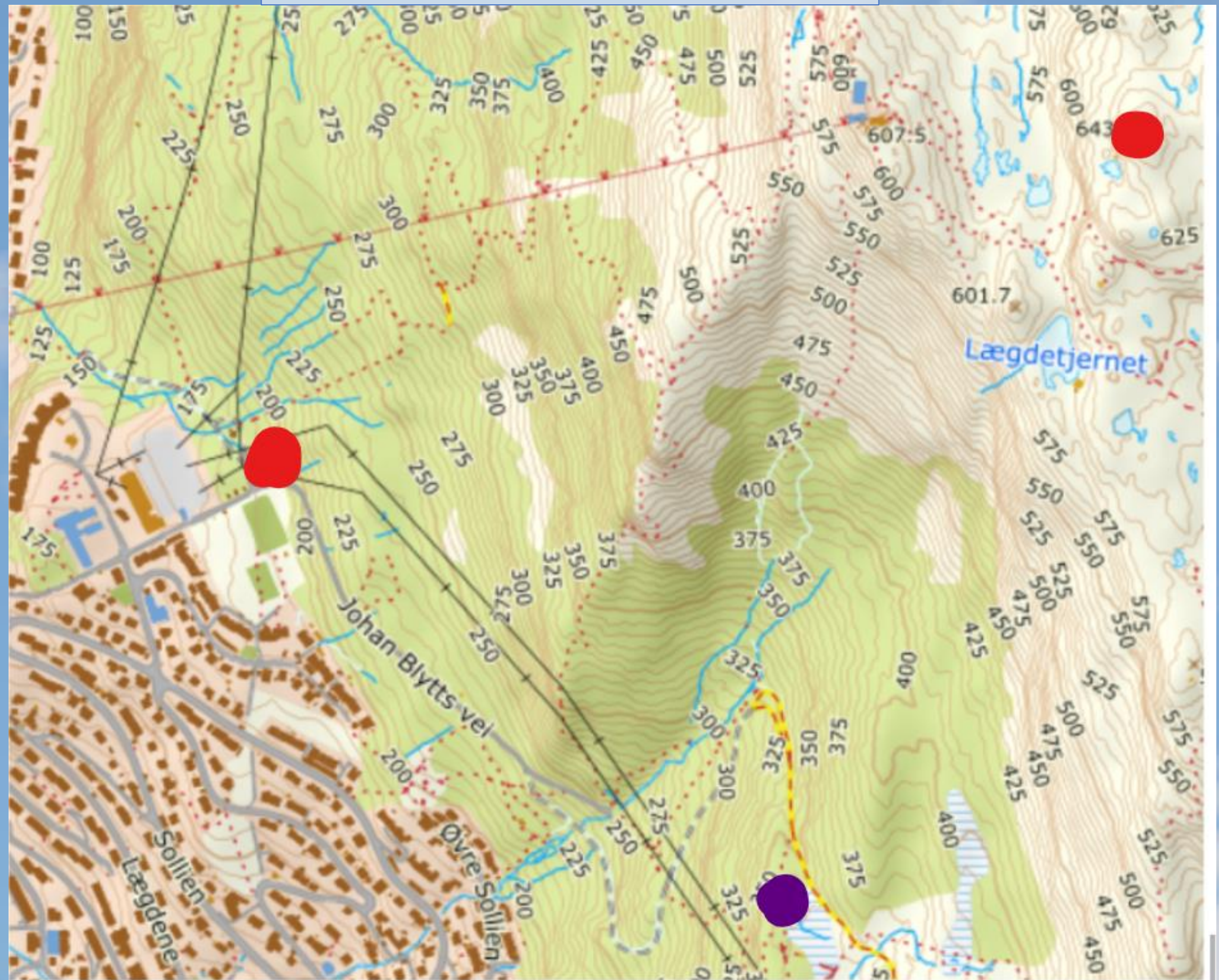


Figure 1: Locations for the three anemometers. Red dot to the left is the bottom of Ulriken. The red dot top right is the top of Ulriken.

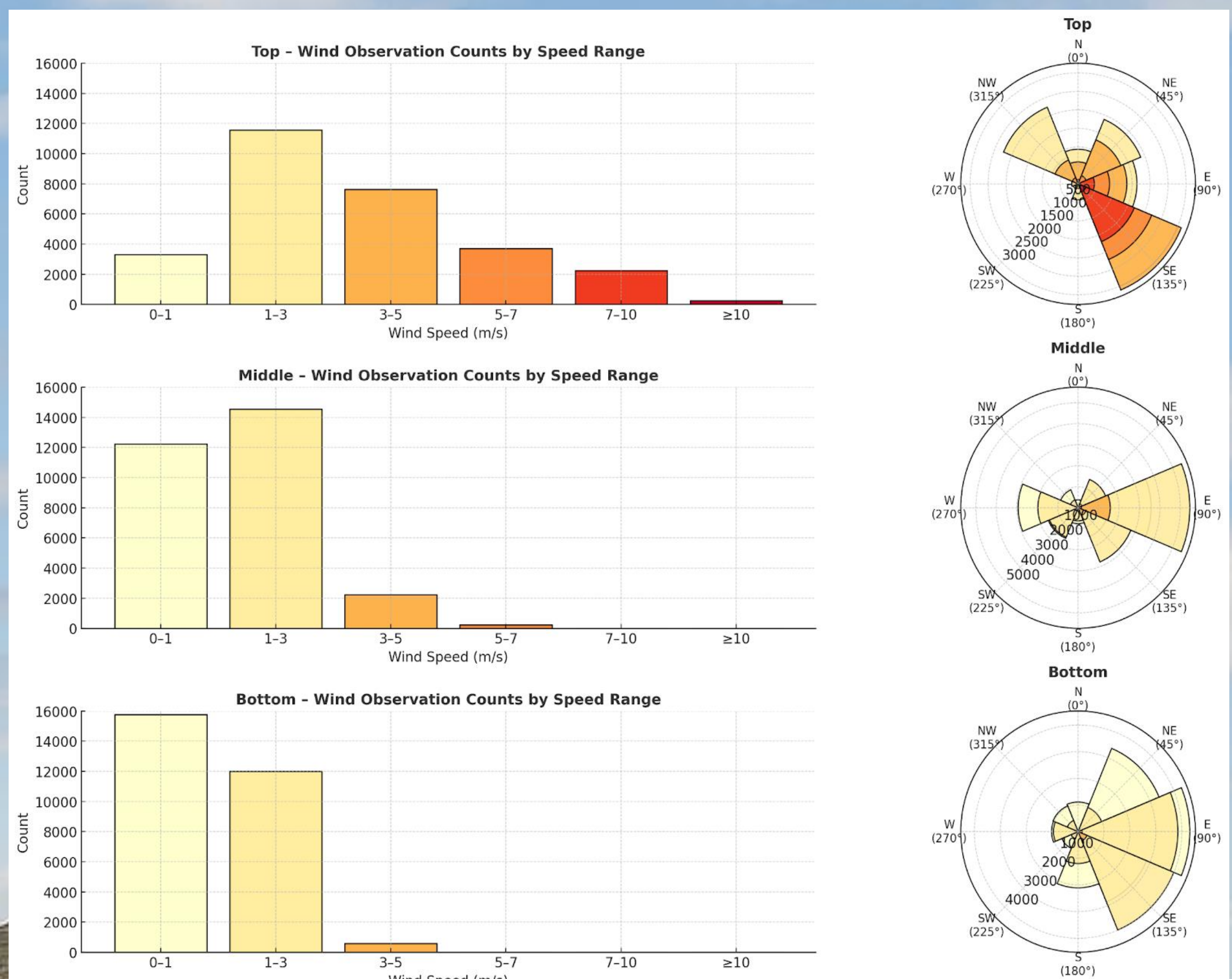


Figure 2: Wind observations count by wind speed range and direction.

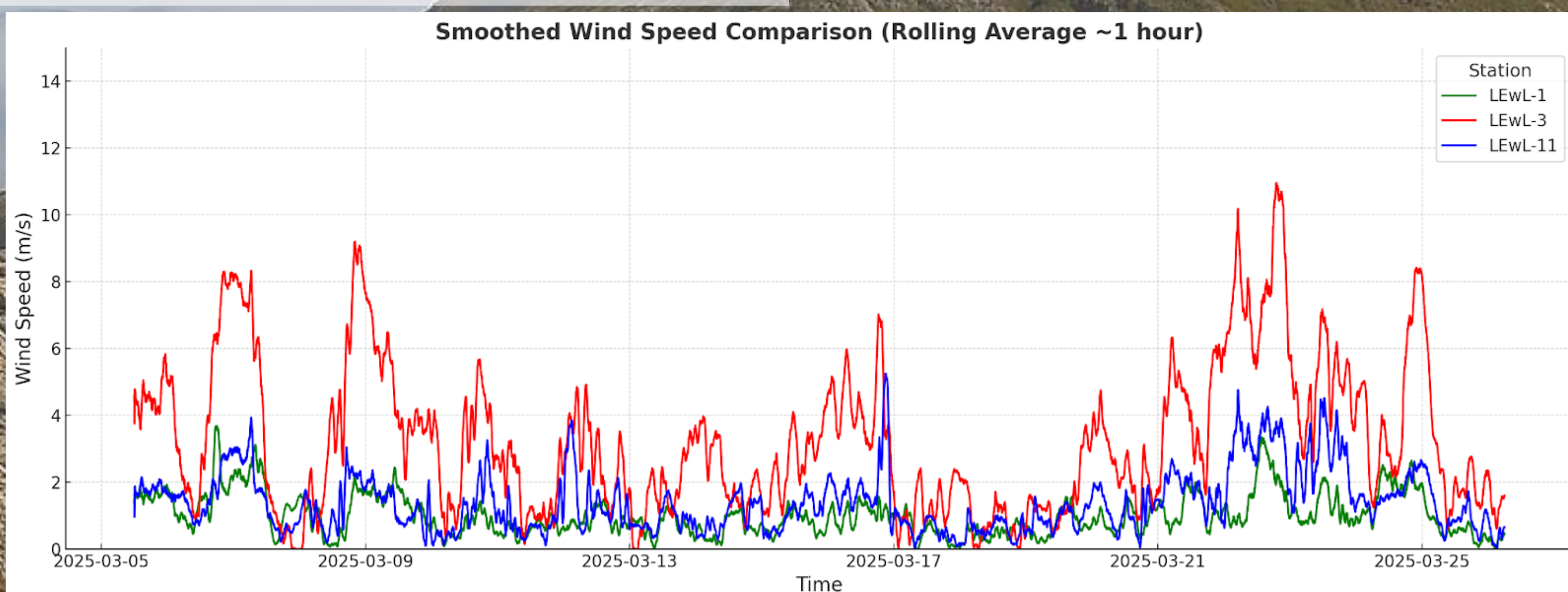


Figure 3: Smoothed wind speed comparison. LewL-3 (TOP), LewL-11 (MID), LewL-1 (BOT)

Sources:

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