

Uncertainties and Error Estimates of **LIDAR-Measurements in Complex Terrain**

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in collaboration with

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- **Aim:**
Compare and evaluate correction methods for ground based LiDAR measurements in complex terrain.
- **Data:**
Data from 5 Austrian sites in mountainous regions, elevation between 1450m and 1850m. Parallel LiDAR and met-mast data.
- **Results:**
The 7 participants delivered about 10 sets of correction factors for each of the 5 sites. Calculated from different methods and parameters.
- **Conclusions:**
The sites in the exercise turned out to be challenging and on the border of, or beyond, the applicability of the correction methods.

Focus shifts from the calculation of corrections factors to disentangling different effects and influences:

- **Terrain characteristics:**

- Terrain slope, statistics of terrain slope
- Terrain curvature
- Elevation range & statistics
 - ...and all of that for different distances around the measurement point.
- RIX, IEC61400-1

- **Flow characteristics:**

- Vertical wind speed, inflow angle
- Wind shear, regularity of wind shear
- Turbulence intensity
- Stability (time of day)

- **Organizational:**

- Exercise will conclude (somewhat belatedly) early next year.
- There will be a workshop (physical?) to finish up a report on our findings.

- **Contents-wise:**

- It has become clear that robust conclusions need a greater number of datasets covering a large range of complexity, different regions, and different meteorological conditions.
- The Question is: What to look for in the evaluations, when reaching out to a larger number of datasets?