



nabla wind hub

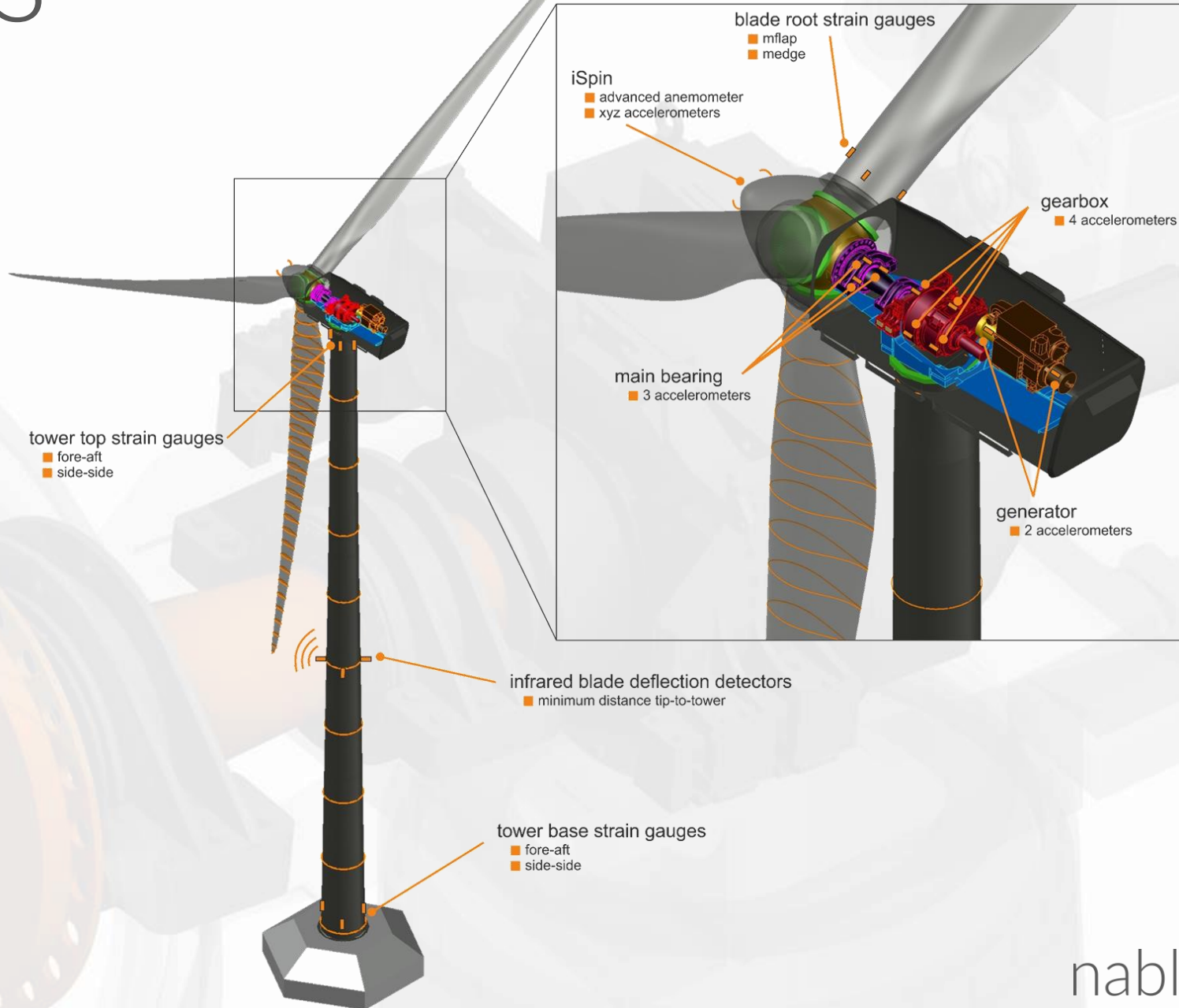
retipping prototype results



prototype



sensors

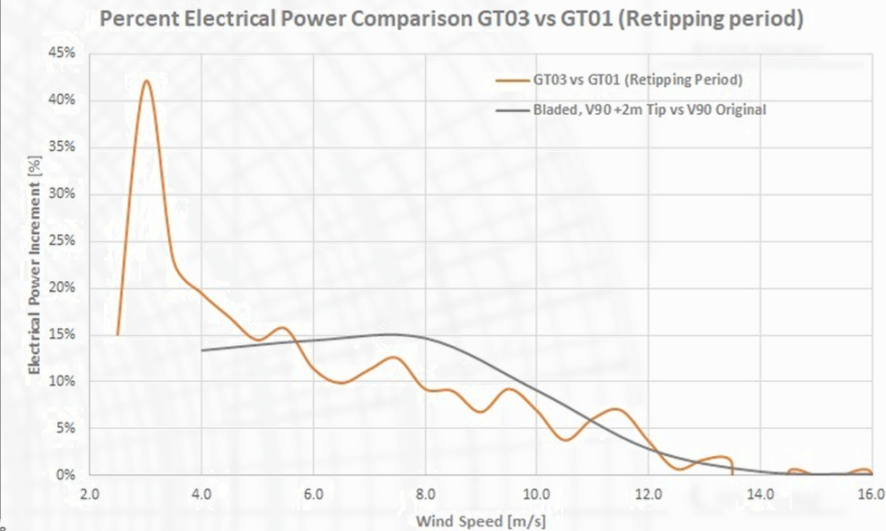
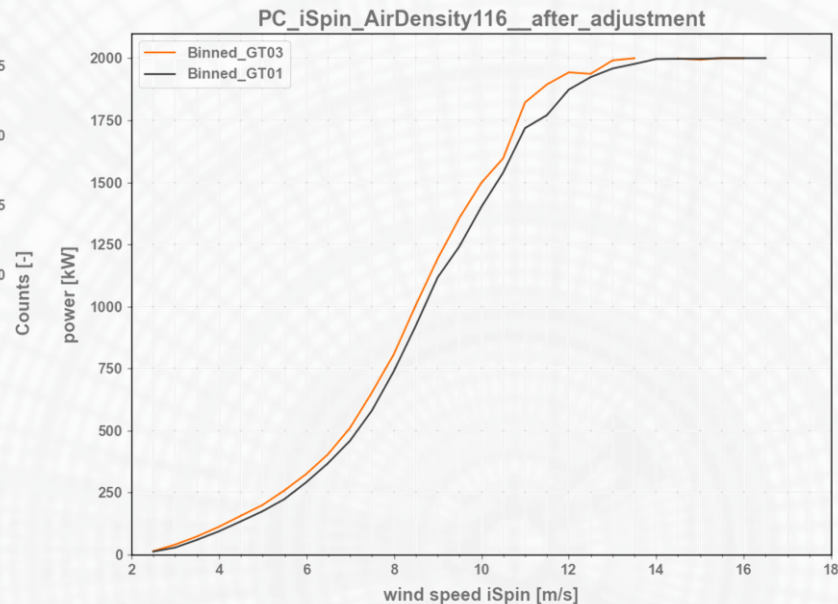
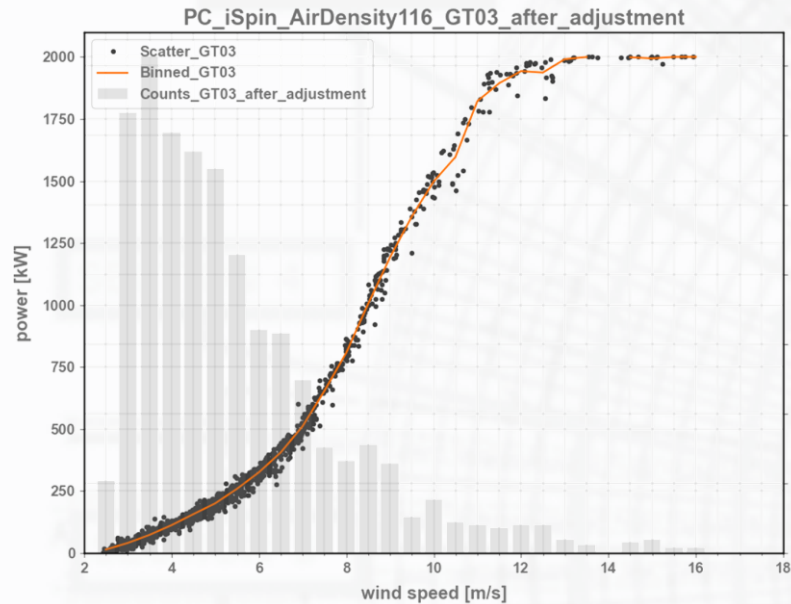


2021-09-08: on!



power curve results

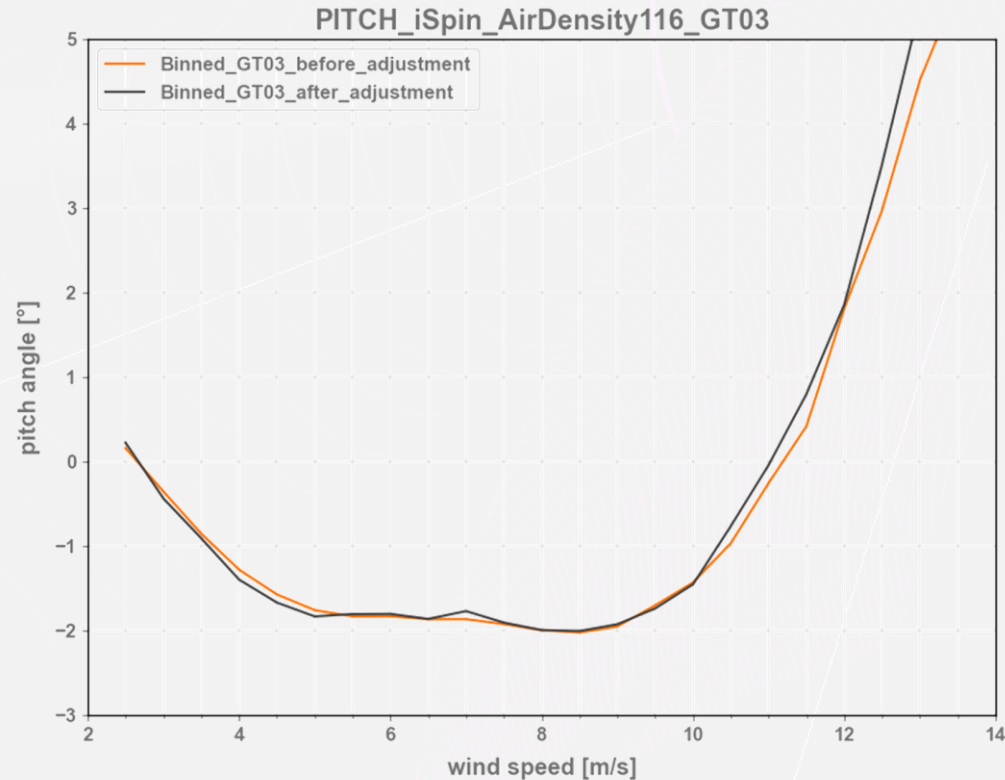
- G03 prototype vs G01 baseline
- **only 3 weeks of measurements** since 2021-09-08 9h00m CET
- aligned with expected power curve gains
- all data iSpin corrected acc IEC61400-12-2



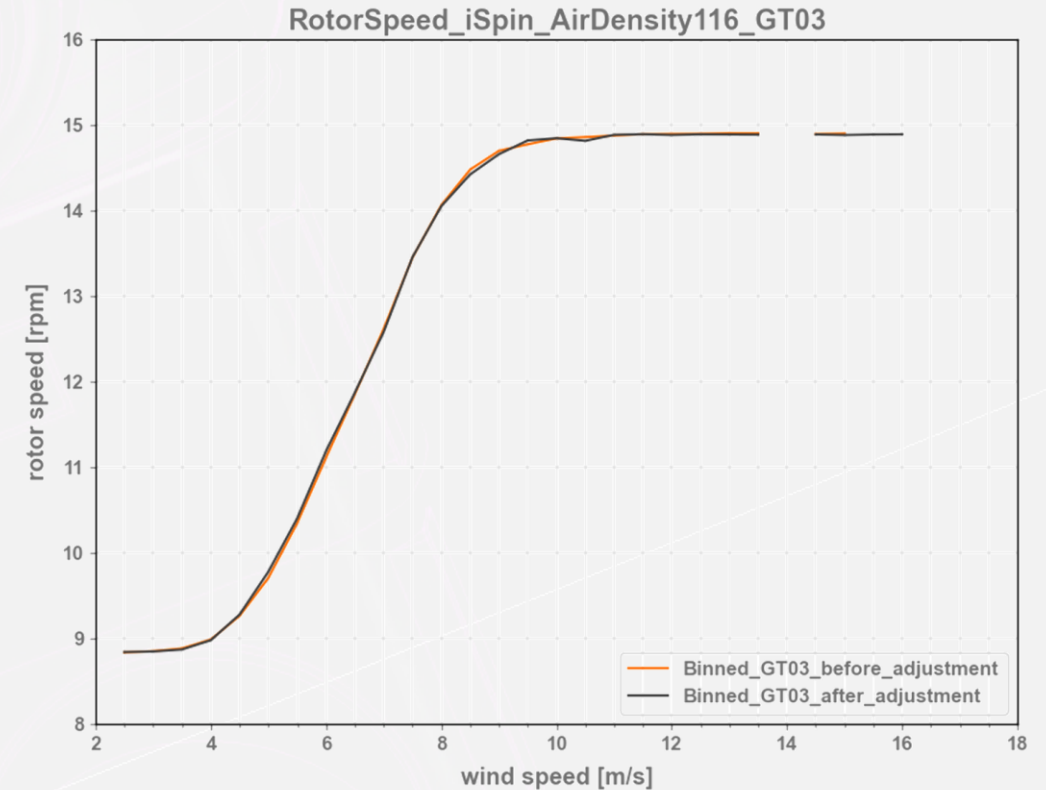
EAP gain based on measurements: 10.2%

controller results

- controller statistics show **same controller performance** before and after retipping: retipping is plug&play



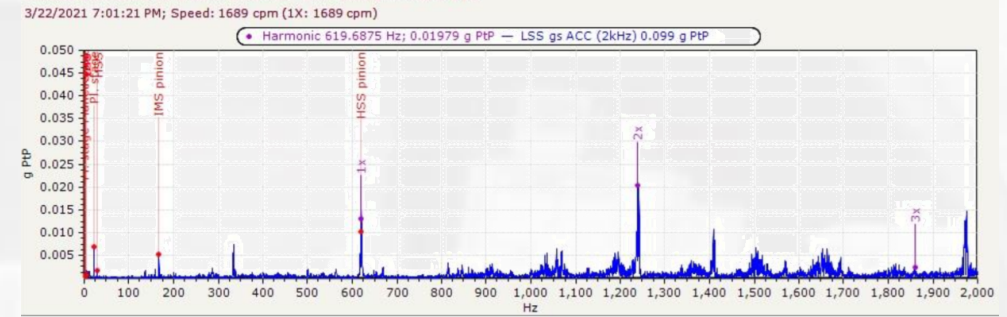
exactly same pitch curve below rated
pitching before due to reach of nominal power before



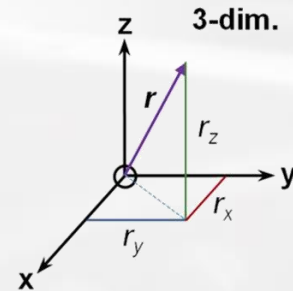
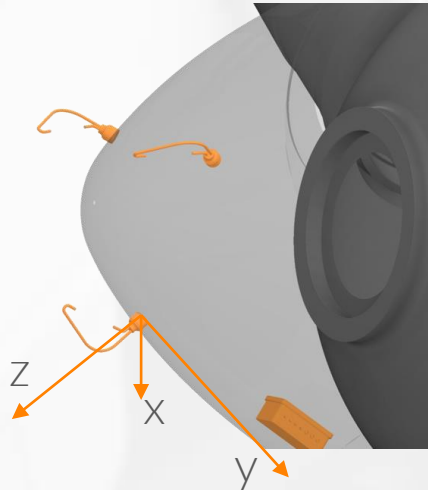
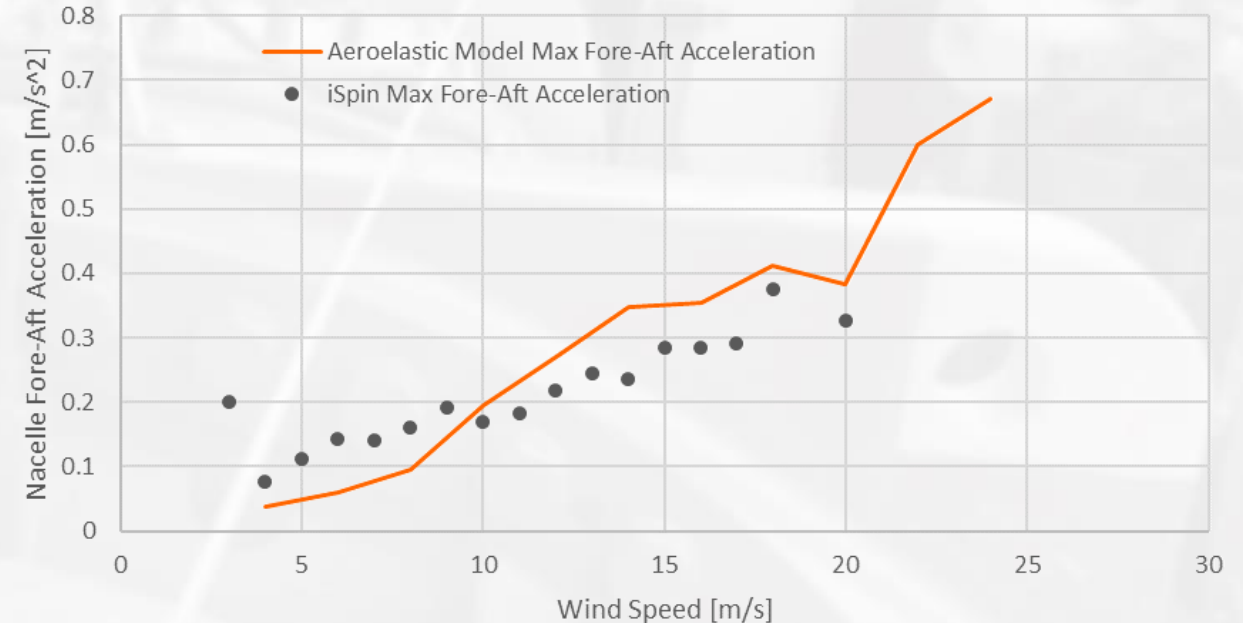
exactly same rotor speed curve

accelerations results

- drive train accelerations: data post-proto still not available
 - pre-proto space of events created and analyzed
- nacelle fore-aft and side-side accelerations measured with iSpin
 - good results: as expected

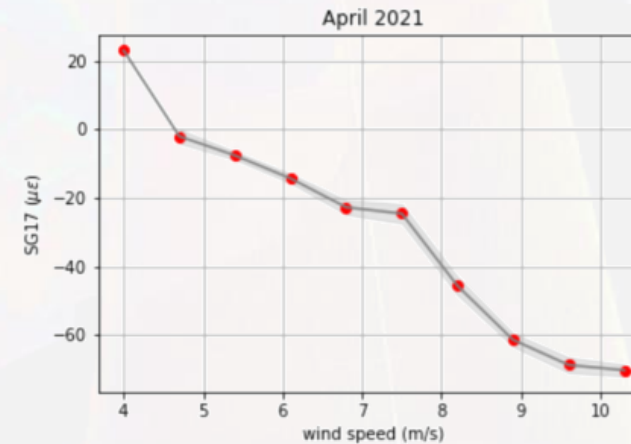
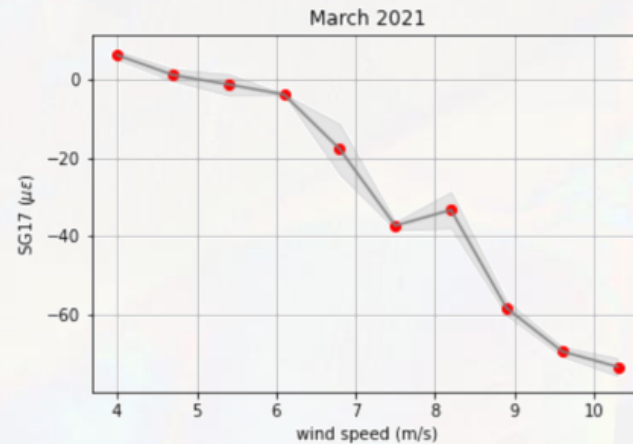
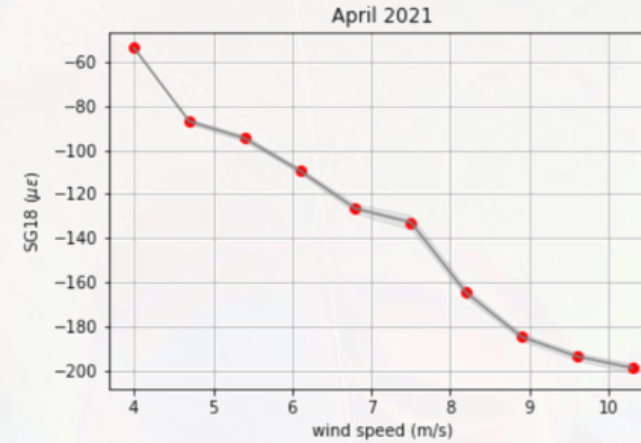
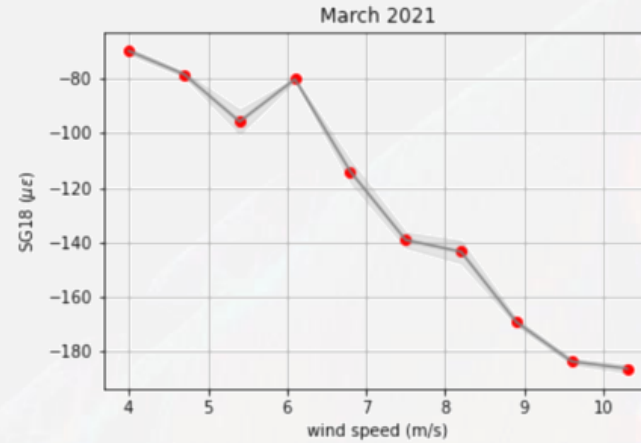


Max Nacelle Fore-Aft Accelerations
Site Specific Conditions



loads results

- strain gauges measurements: data post-proto still not available
 - pre-proto space of events created and analyzed



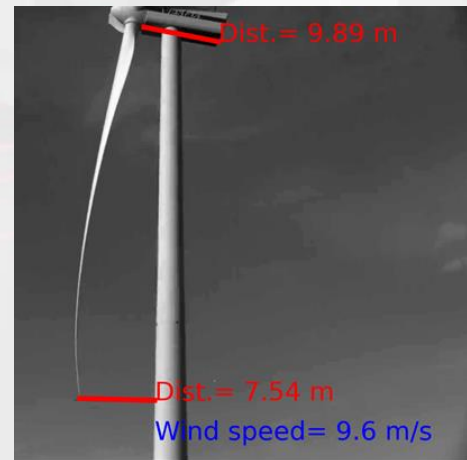
deflections results

- sensors malfunction in summer:
 - high solar radiation impacted infrared sensorics
 - data acquisition limits under revision
- photogrammetric sanity checks done during commissioning with industrial HD camera + videos

static clearance



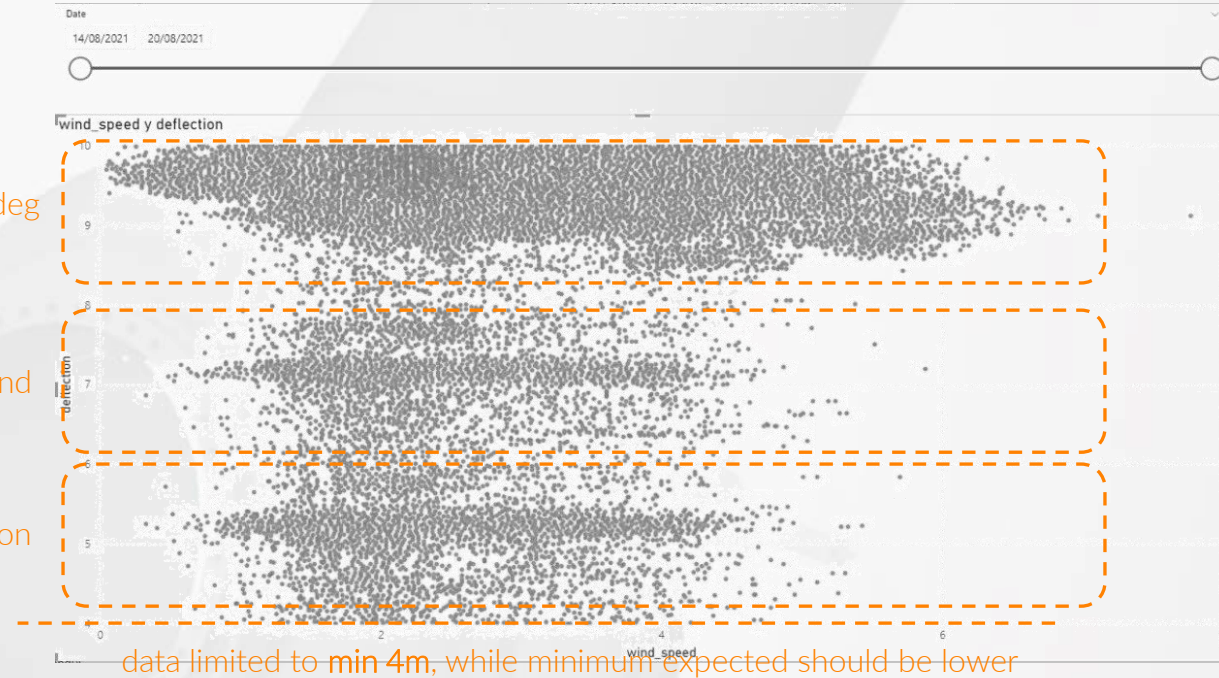
production



idling 90deg

ready waiting for wind

power production





nabla wind hub

The nextGEN wind solutions Group

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