

VM Report Short Summary

This report is submitted by the VM grantee as part of the required deliverables.

Action number:	CA18235 – PROfiling the atmospheric Boundary layer at European scale
VM grant title:	Doppler lidar toolbox adjustments for windcube
start and end date:	21/10/2022 to 27/10/2022
Participants:	Markus Kayser (Grantee), Maxime Hervo (Correspondence, Data support)
Objectives/Deliverables:	O.3.1, O.3.3, O.4.1, O.4.2/ D.3.1, D3.3, D4.1, D4.3

Description of the outcomes and achieved outputs

The VM accomplished to implement the necessary adjustments to DWD’s Doppler wind lidar (DWL) toolbox, which was designed to standardize VAD wind processing of Halo Photonics systems. The task required MeteoSwiss to share data of the latest windcube generation with DWD. This latest toolbox version is eligible to process data obtained with the latest windcube. This enables users to use the full functionality of DWD’s toolbox for standardized processing, which includes the choice of data filtering, quality control and quicklook generation of LV1 and LV2 products in netCDF format.

This task marks an important step for the goals of PROBE WGs 3/4 by helping DL users to generate standardized and quality controlled LV2 wind products, regardless of instrument type. We now offer users of the two most common system types a single toolbox to process their measurements. A documentation with concrete examples for users of the of the latest version can be found on https://github.com/mkay-atm/dl_toolbox. Future VMs within the DWL-Subgroup should concentrate on the validation of the toolbox and on improvements regarding the user-friendliness.

System	SCAN_TYPE	LV1	LV2	Quicklooks
Halo Streamline	VAD / UserX	yes	yes	LV1 / LV2
Halo Streamline	DBS / UserX	yes	yes	LV1 / LV2
Halo Streamline	Stare	yes	no	LV1
Halo Streamline	RHI	yes	no	no
Vaisala Windcube	fixed_VAD / fixed_VAD_TP VAD / VAD_TP	yes	yes	LV1 / LV2
Vaisala Windcube	DBS / DBS_TP	yes	yes	LV1 / LV2
Vaisala Windcube	fixed/Stare / fixed_TP/Stare_TP	yes	no	LV1
Vaisala Windcube	RHI / RHI_TP	yes	no	no
Vaisala Windcube	PPI / PPI_TP	yes	no	no

Examples of quicklooks of the Lindenberg windcube generated with the DWD toolbox

