

Recent and ongoing coherent Doppler lidar measurements at DLR. Stephan Rahm, DLR (Germany).

ABSTRACT

In the past the coherent Doppler Lidar of DLR was used both onboard the Falcon research aircraft and ground based in a 20 ft container. At the ground based measurements mainly wake vortex of aircrafts were investigated but there was also one campaign with observations at a wind energy power plant. At airborne campaigns the 3 dimensional wind field was the main interest. However having a lidar available at sudden events like the Eyjafjallajökull eruption on Iceland has opened an opportunity for measurements where normally another Lidar with shorter pulse and depolarization channel would have been chosen if available in this moment. This paper will report about the following campaigns:

2009: Wind energy Bremerhafen. Measurement of the flow before and after a wind power plant

2010: Eyjafjalla volcanic ash: This was an adhoc campaign to make some statement to volcanic ash content over Europe.

2012: Wake Vortex reference measurements Belgium. Here the DLR System was used as a “reference” for a recently developed direct detection lidar.

2013: Saltrace/Volcats: Current campaign at the Cape Verde Islands and Antigua in order to trace Sahara dust outbreaks.