

General description

The Cabauw mast is located in the western part of the Netherlands (51.971 °N, 4.927 °E). This site was chosen, because it is rather representative for this part of the Netherlands and because only minor landscape developments were planned in this region. Indeed the present surroundings of Cabauw do not differ significantly from those in 1973. The North Sea is more than 50 km away to the WNW, and there are no urban agglomerations within 15 km radius. The nearby region is agricultural, and surface elevation changes are at most a few metres over 20 km. Within 40 km radius there are four major synoptic weather stations, among which is the regular radiosonde station at De Bilt, ensuring a permanent supporting mesoscale network. Near the mast, the terrain is open pasture for at least 400 m in all directions, and in the WSW direction for 2 km. Farther away, the landscape is generally very open in the West sector, while the distant East sector is rather rough (windbreaks, orchards, low houses). The distant North and South sectors are mixed landscapes, much pasture and some windbreaks. So the highest mast levels have in all directions a long fetch of landscape roughness which is usefully similar to the roughness observed in the lower surface layer (Wieringa, 1989). An effective all azimuth mesoscale roughness length of 0.15 m matches well with observed ABL behaviour. Sectorwise roughness lengths are given by Van Ulden et al. (1976) and by Beljaars and Holtslag (1991). Panoramic photos from the top of the mast are shown by Driedonks (1981). On the mast itself no undisturbed measurements can be made below 20 m. Auxiliary 20 m masts are installed to the SE and the NW at sufficient distance from the mast foot building. South and North of the mast are well-kept observation field for micrometeorological observations. The soil consists of 0.6m of river-clay, overlying a thick layer of peat; its structure has been investigated in some detail (Jager et al., 1976). The water table is about 1 m below the surface, but can be higher during wet periods.

Since then the only significant change in the surroundings is the expansion of the village of Lopik east of the site from the year 2000 on

References

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- Driedonks A.G.M. (1981). Dynamics of the Well-mixed Atmospheric Boundary Layer. [KNMI-WR81-02](#).
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- Ulden A. P. van and J. Wieringa (1996). Atmospheric boundary layer research at Cabauw. *Boundary Layer Meteorology*, 78, 39-69.
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Vegetation and Land Use:

Dominant land cover at the measurement location: Grassland.

Canopy height: 0.1 m

Land cover within 50 m of site: Grassland

Land cover within 500 m of site: Grassland

Land cover within 12 km of site: Grassland
Seasonal land cover changes: Crop field (Maize) West of the site

Major changes in land cover: Since 2002 Maize is grown West of the site which considerably affects the flux observation during westerly winds until September 2006. After this date the flux tower was moved to avoid this interference.

Slope at the site: No slope.

Other notes: None.

Soil Type and Characterization:

Surface soil type: 35-50% clay.

Soil type in deeper layers: Clay and below 0.75 m Peat.

Surface soil porosity: 49%.

Soil porosity in deeper layers: 49%

Soil infiltration rate: No information.

Bulk Dry Density: No information.

Saturated Hydraulic Conductivity: No information.

The Soil Reference Group(s) (from World Reference Base for Soil Resources): No information.

Site References

Web: <http://www.knmi.nl/~bosveld> -> Observations -> Documentation (Documentation of Cabauw in-situ observations)
<http://www.cesar-database.nl> (webbased data portal for Cabauw Experimental Site for Atmospheric Research)