AN OVERVIEW OF SURFACE WINDS IN NAMIBIA

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Abstract

Information on surface winds, including the raw data itself is frequently needed in a number of applications. In water balance analysis, wind factor is often incorporated in the calculations as one of the critical parameters, the so-called aerodynamic term. In environmental applications, information on surface winds is used to plan the location of disposal sites. The location of effluent-emitting factories in relation to population centres normally takes wind information into account as is also always the case in impact studies concerned with land degradation. Wind is also a source of energy and wind information plays a key role in the design and deployment of renewable energy technologies. Other areas of application include construction, transport, aerial spraying works, sports, and filming industries.

From purely meteorological considerations, wind is an important element because it is a transportation and advection agent. Specifically, in operational weather forecasting, these transportation and advection properties play a crucial role in deciding the future states of a given place's moisture content and temperature. For instance, a strong surface southerly wind in the south of Namibia, originating from the south polar region, is likely to cause a sharp drop in temperatures and increase humidity levels.

Since wind is a vector quantity, having both magnitude and direction, presentation of information on winds normally includes these parameters. The commonest formats of presentation include graphical and digital wind roses. The latter are ordinarily in the form of bivariate (direction/speed) frequency tables, and are the main option used in this study.

This article is a summary extracted from a detailed documentation of the analysis, titled "*PRE LIMINARY ANALYSIS OF SURFACE WINDS IN NAMIBIA*
" recently done by the same authors.

It is shown that surface winds in Namibia are much stronger along the coastal areas than in the interior of the country. While southerly and southwesterly wind regimes often exceeding 10 metres per second dominate the coastal areas, the interior generally experiences lighter variable winds which very rarely exceed 5 metres per second or about 18 kph.