VARIATION OF SURFACE WINDS AT HAMBANTOTA FROM APRIL 1990 TO MARCH 1991

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Abstract: Hourly measurements of surface winds have recently become available through the Ceylon Electricity Board Wind Energy Project. These records were used to characterise the structure of the wind velocity of the atmospheric surface layer at Hambantota in different seasons. The surface winds at Hambantota are from the north-east from November to January. In the rest of the year, the winds are directed towards the south-west particularly intensely around July. The Von Karman log-law can approximate the velocity profile. The velocity at heights between 10 m and 20 m are highly correlated. There is a significant diurnal variation of wind velocity which averages 3-5 m/s from 2400 to 0800 h. Thereafter it peaks at 7-10 m/s around 1530 h. The "gustiness" of the wind as measured by the mean of the differences between maximum and average velocity is moderately greater during the monsoonal months. The average monthly wind velocity is correlated with precipitation. These seasonal variations of wind and precipitation in Sri Lanka are correlated with the latitude of the equatorial low pressure trough commonly called the Inter-Tropical Convergence Zone.

Key Words: Hambantota, velocity, wind