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STUDY OF CLIMATOLOGY OF SCHIRMACHER OASIS, QUEEN MAUD LAND, EAST ANTARCTICA WITH REFERENCE TO INDIAN ANTARCTIC STATION MAITRI

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The Indian Antarctic Station, Maitri (70^0 45′ 57″ S, 11^0 44′ 09″ E) is located in the Schirmacher Oasis of East Antarctica close to the periphery of the continent. Since 1990 all meteorological observations such as pressure, temperature, wind speed/direction, precipitation and total global solar radiation etc., are being recorded at Maitri.

Three hourly daily synoptic observations recorded at Maitri for the period 1990 to 2005 have been used for computation of daily, monthly and annual mean values of temperature, wind, pressure, precipitation, weather phenomena, clouding and total global solar radiation. In light of these computations and regression analysis, result for these parameters and the climatology of Maitri, Schirmacher Oasis has been discussed in this paper.

Although the length of data records of Maitri are very short for investigation of temperature trends, the series of annual mean surface air temperature have been analysed for trend studies using least squares regression. The values show a high degree of inter–annual variability. The coefficient of regression function is statically significant and corresponds to a mean decadal cooling trend of 0.26^0 C over the period (1990 – 2005). The analysis of temperature series of January and July, indicates an apparent slight general increasing trend over the period of the order of 0.38 ^{0}C in the January mean maximum and average temperatures whereas mean minimum temperatures shows a negative trend. July temperatures shows negative trend of 0.21 ^{0}C per decade.

The Climatology of the station, Maitri, gives several interesting indications concerning the climate of Schirmacher Oasis. The study of temperature has shown a cooling trend of 0.26^0 C per decade. A similar significant negative trend has been observed in other meteorological parameters such as MSL pressure, wind, numbers of precipitation and blizzard days. Some of observations are just opposite to the facts being reported from West Antarctic stations. Therefore observations of Maitri will be extremely valuable in monitoring of the global climate in future.