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O_3, SO_2 , $NO_2$and UV-B measurements made with Brewer Spectrophotometer at Maitri, Antarctica

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A Brewer Spectrophotometer (Mark IV, No.153) was installed at Maitri, the Indian station in Antarctica by India Meteorological Department in July 1999. Regular measurements of the total column ozone, SO_2, NO_2 and UV-B were started from September 1999 and the data used here is up to December 2005.The ozone hole event is clearly seen during all the seven years. Starting from the month of September, as the days pass, the ozone column decreases, reaches the minimum during October/November, then increases rapidly and reaches the normal value in December/January. SO_2 value increases from September, becomes maximum somewhere in October/November (a broad maximum) and then decreases. On the average, during the ozone hole period, the SO_2 column appears to increase by a factor $\sim$5. NO_2 values increase during the ozone hole period and continues till middle of January and the decreases. The same pattern is seen in all the years from 1999-2005.On the average, during the ozone hole period, the NO_2 column increases from a value less than 0.1 to $\sim$1 D.U. The variation of SO_2 is neither exactly identical to that of NO_2 nor of O_3. Also there is no correlation between NO_2 and O_3 variations. UV-B flux starts to increase, reaches the maximum in October/November and then decreases. This trend is clearly discernable in all the years from 1999-2005. On an average, during the ozone hole period, the UV-B flux appears to increase by a factor of $\sim$5.