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Study of Surface Ozone and Its Precursor Gases at Port Blair, India, a Remote Marine Station in Bay of Bengal

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Port Blair is a remote marine station in the Bay of Bengal. Climate of this station is influenced by three types of air flow: flow from Indian Subcontinent, flow South-East Asia, flow from Indian Ocean. A Coordinated campaign was made for the measurement of surface ozone, CO, NOx, CO2, Aerosol concentration and its size, UV radiation at Port Blair during the period of March 16 -26, 2002. Near zero surface ozone of different time scales has been observed several times during the measurements of trace gases for the period of March 16-26, 2002. NOx (NO +NO2) has been observed very high value (∼40 ppbv) during low ozone concentration. Carbon monoxide was also observed very high (300-600 ppbv) during this period. Source of this high pollutant are not clear although 7-days back Trajectory analysis suggest that airmass has come from eastern side of Indian subcontinent. In addition, surface ozone is being monitored in continuous mode from August, 2005 onward. Analysis of almost one year surface ozone data shows that the concentration of surface ozone normally varies around 20 ppbv, but it reaches to 80 ppbv when air is originated from either Indian subcontinent or South-East Asia. Sudden jump in concentration in surface ozone from 20 ppbv to 80 ppbv may be attributed to changes in flow pattern during the transition period of monsoon.