

EGYPT

Ozone Depleting Substances (ODS)

In line with the government's general policy and reflecting the country's commitment to the Montreal Protocol, the Egyptian Government has shown sustained commitment to reduce the consumption of Ozone Depleting Substances (ODS).

Egypt is neither a manufacturer nor an exporter of ODS. Egyptian Environmental Agency Affairs (EAAA) monitoring Ozone Depleting Substances (ODSs) as CFCs, CC14, Halons, CH3Br, C2H3Cl3, and other.

Data reporting

The annual consumption data of ODSs available from the Fund Secretariat and the Ozone Secretariat in Nairobi Table (1.2) show that Egypt is in compliance for all phase-out targets and according to the control measures of Montreal Protocol Fig. (1.2.):

Table (1.2): ARTICLE 7 DATA (ODP TONNES).

	Baseline	1999	2000	2001	2002	2003	2004	2005	2006
CFC	1,668.0	1,373.6	1,267.0	1,334.8	1,294.0	1,102.2	1,047.6	821.2	593.6
CTC	38.5	33.0	27.5	11.0	11.0	13.0	12.1	5.5	5.5
Halons	705.0	810.0	860.0	790.0	230.0	180.0	193.0	145.0	4.4.0
MB	238.1	409.2	420.0	432.0	270.0	238.0	219.0	188.4	180.0
TCA	26.0	25.0	20.0	15.0	19.0	18.0	17.5	15.0	12.5

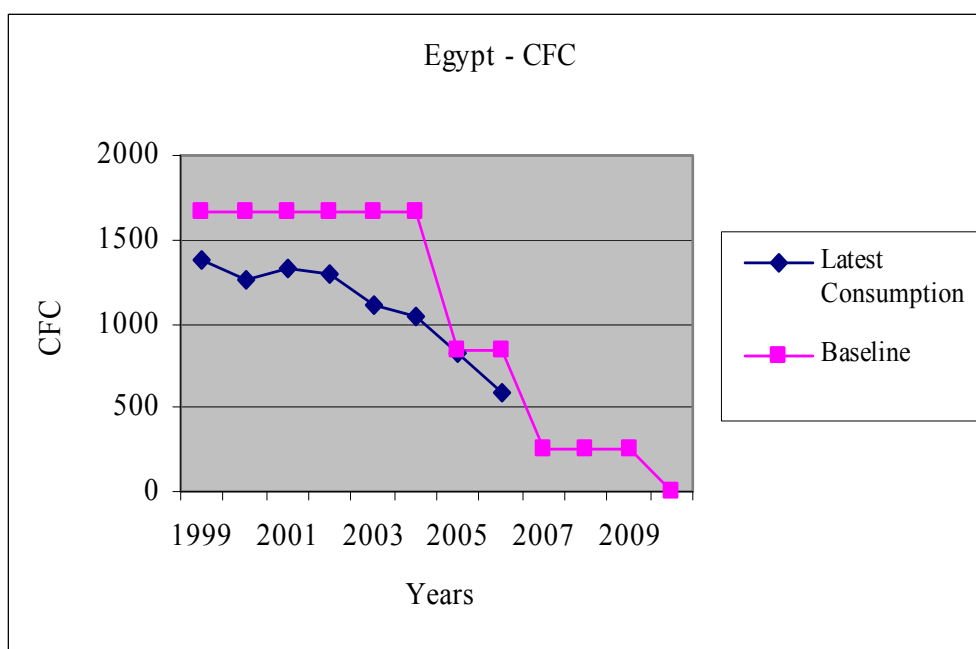


Fig. (1.2.a): CFCs Consumption (ODP tons).

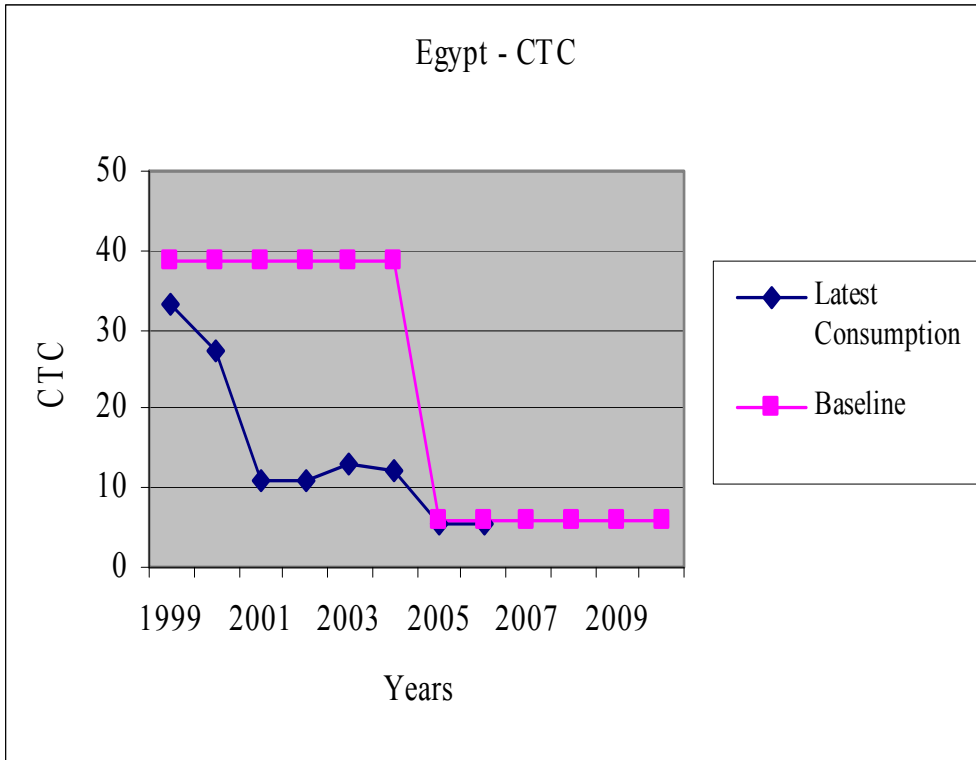


Fig. (1.2.B): CTCs Consumption (ODP tons).

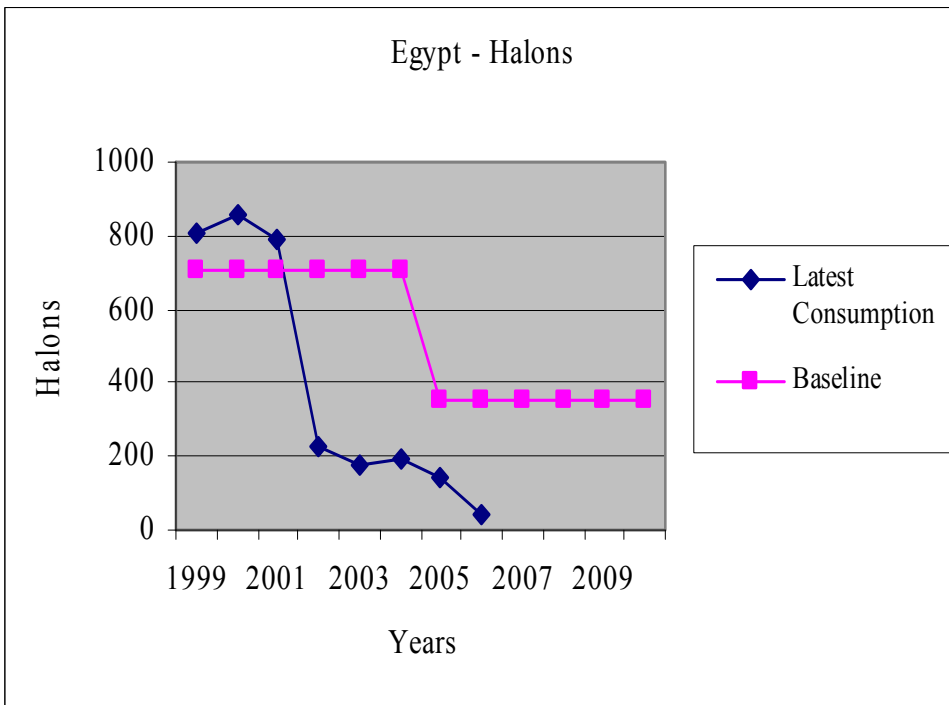


Fig. (1.2.C): Halons Consumption (ODP tons).

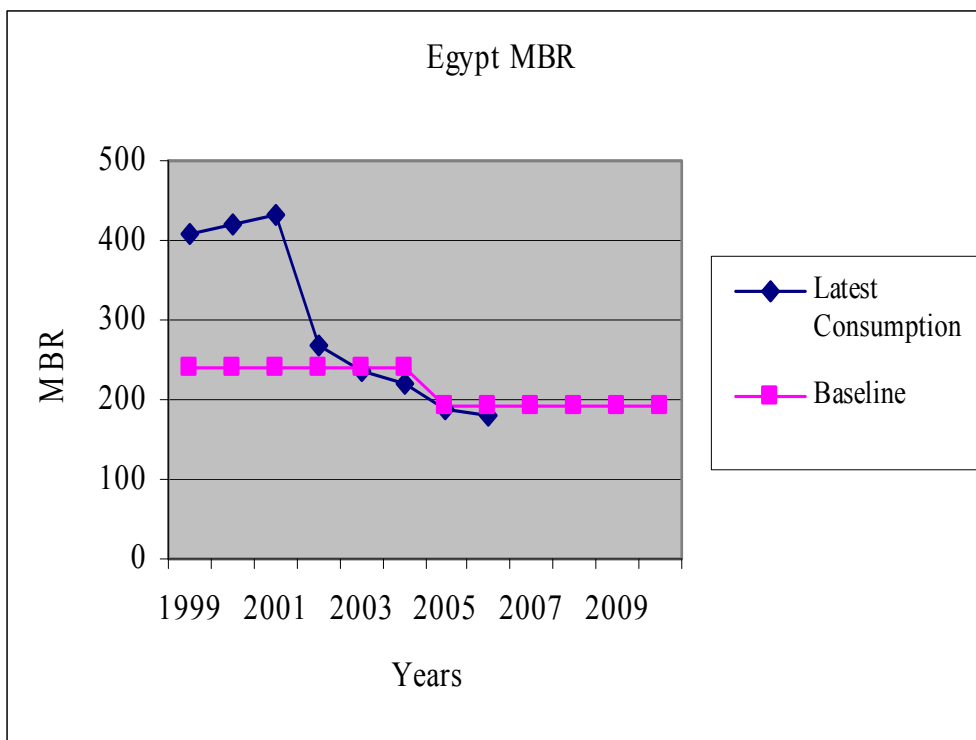


Fig. (1.2.D): MB Consumption (ODP tons).

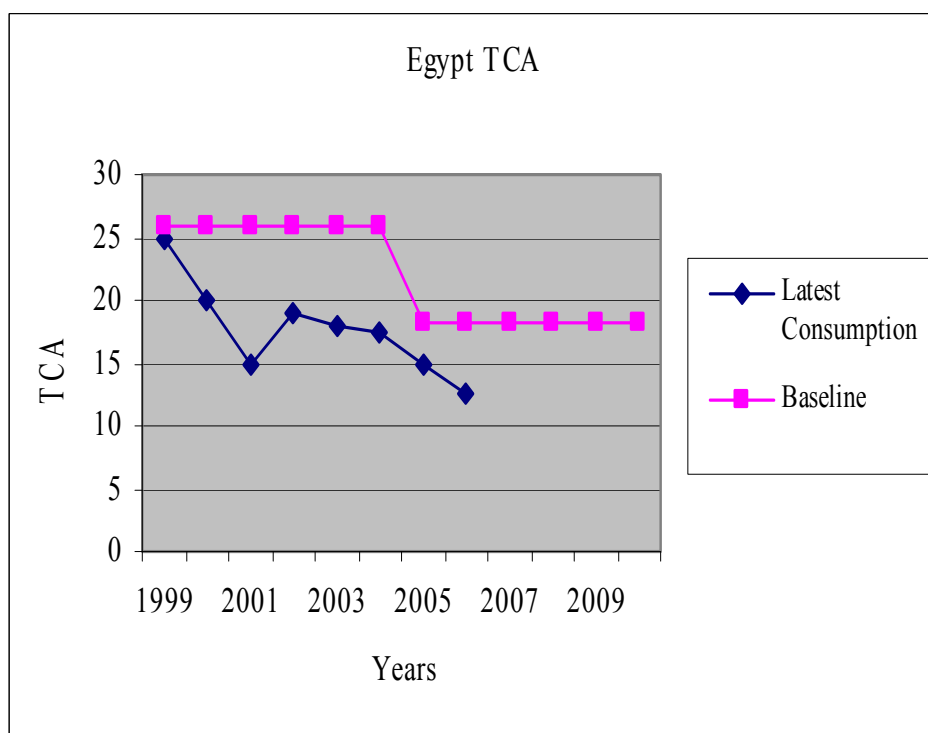


Fig. (1.2.E): TCA Consumption (ODP tons).

Information to the public

- The awareness campaigns especially addressed to decision-makers, customs, investors, labour and general awareness addressed to NGOs, universities and the public.
- Celebrating the International Ozone Day on 16 September, and participating in celebrating other environmental days every year.
- Updating the web page for Ozone Unit activities and the Egyptian achievements for protecting the Ozone layer within the web site of EEAA (<http://www.eeaa.gov.eg>).

Measurements of Stratospheric Ozone

Egyptian Meteorological Authority (EMA) is responsible for measurements of column ozone amount (stratospheric ozone) and operates the main total ozone-monitoring network. Long-term daily observations of total ozone have been performed at the regional ozone centre of EMA at Cairo (30.08°N, 31.28°E) with the Dobson Spectrophotometer (D096) since 1967. Since 1984 second Dobson instrument (D069) has been maintained at Aswan (23.97°N, 32.87°E) to measure the amount of ozone over tropical area. At the late of 1998 Brewer Spectrophotometer mark II (B143) has been maintained at Matrouh (31.33°N, 27.22°E) to measure the total ozone and SO₂ over northwest coast area of Egypt. With the end of 1999 third Dobson Spectrophotometer (D059) has been maintained at Hurghada (27.28°N, 33.75°E) to measure the amount of ozone over Red sea area.

The daily and monthly mean values of total ozone amount are stored in the ozone database at EMA and they are also deposited in the WOUDC, Toronto, Canada.

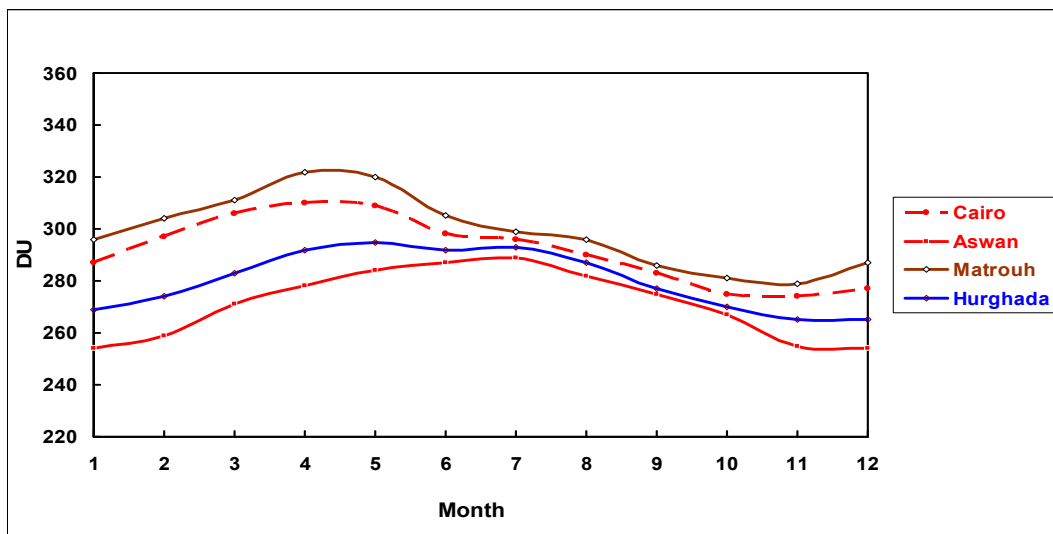


Fig. (2.1.A): Annual variation of ozone column over Egyptian ozone stations.

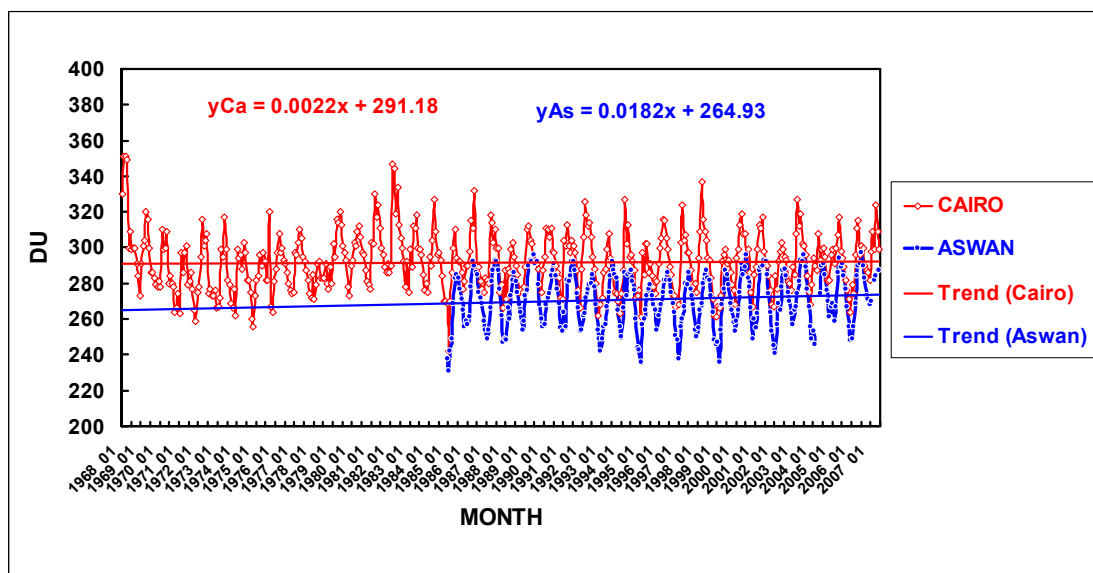


Fig. (2.1.B): Variation and trend of ozone amount over Cairo and Aswan (DU).

Vertical Distribution of Ozone

Vertical distribution of ozone in the atmosphere is measured with Dobson and Brewer Spectrophotometers (Umkehr method) at Aswan, Matrouh and Hurghada. The N-values are stored in the ozone database at EMA and they are also deposited in the WOUDC, Toronto, Canada.

Surface ozone

EMA measure surface ozone outside urban regions, at Hurghada (27.28°N, 33.75°E) which is an official WMO Global Atmospheric Watch (GAW) station. Also EMA measure surface ozone at Sidi Branni (31.37°N, 25.53°E). South Valley University (SVU) in cooperation EMA has been measured surface ozone at Qena (26.20°N, 32.75°E).

UV measurements

Broadband measurements

EMA take the measurements of broadband UV solar radiation using Eppley Ultraviolet Radiometer at Cairo and Aswan since 1989. Also EMA in cooperation with SVU have been measured the broadband UV radiation at Qena since 2000.

Narrowband filter instruments

EMA measured the biologically effective solar UV-B radiation by UVB-1 Pyranometer at Cairo, Aswan since 1998 and at Rafaah (31.22°N, 34.20°E) since 2000. The measurements of the global UV-B are performed with the Brewer single monochromator for different solar zenith angles at Matrouh. Also EMA in collaboration with SVU have been measured the UV-B radiation at Qena since 2000.

DISSEMINATION OF RESULTS

Data reporting

The ozone data collected from the network of Egyptian ozone stations by EMA at Cairo regional ozone centre monthly. Data files of ozone are transmitted regularly with SO₂ to World Ozone Data Center (WOUDC) in Toronto, Canada.

Information to the public

- Updating the web page for Ozone research and the Egyptian Meteorological Authority (EMA) achievements for weather and climate change within the web site of EMA (<http://www.nwp.gov.eg>).
- Matrouh lie on the coast of NW Egypt and summer resort. The scans are used for calculation of actual values of UV Index (UVI) daily presented for the public during the seasons especially the summer season. UVI is a numerical risk scale and a way of describing the daily danger from solar UVB radiation. The EPA used the following classification of the UV exposure level based on the UV index (0-2 minimal, 3-4 low, 5-6 moderate, 7-9 high and >10 very high). UVB insolation displays a daytime variation with maximum at solar noon, figure (2.1) and variation with months take a maximum at summer months (figure 2.1.c). UVB protection is critical during summer and especially so in the hours around solar noon. A person being out in the sun during midday hours more than ten minutes if you are without protection.

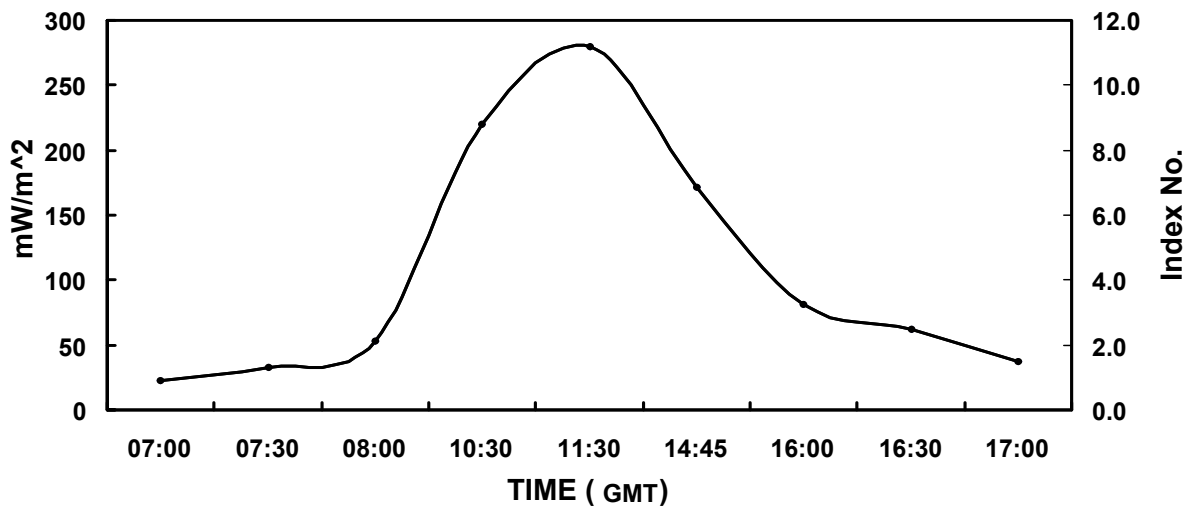
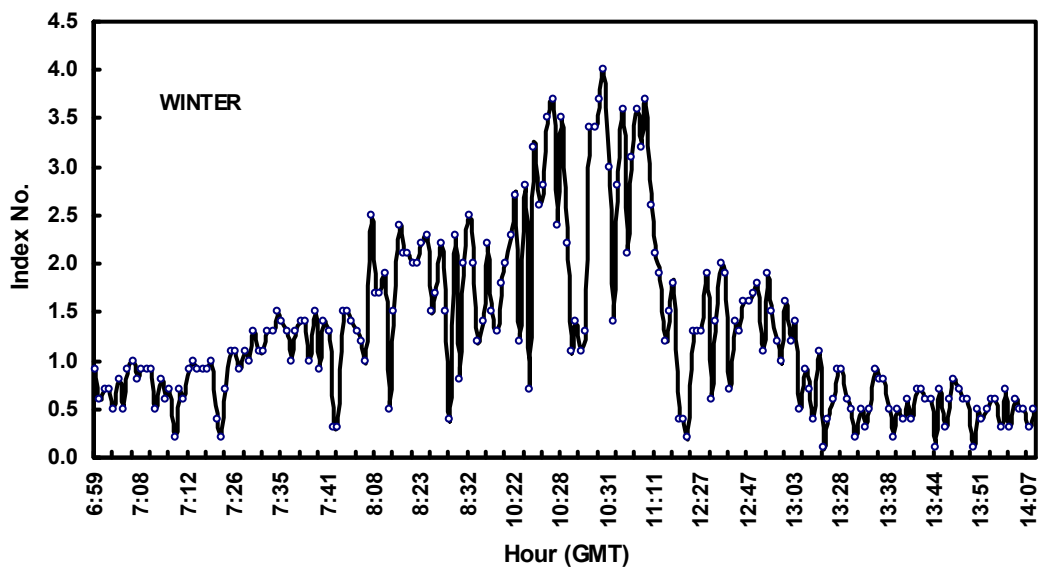
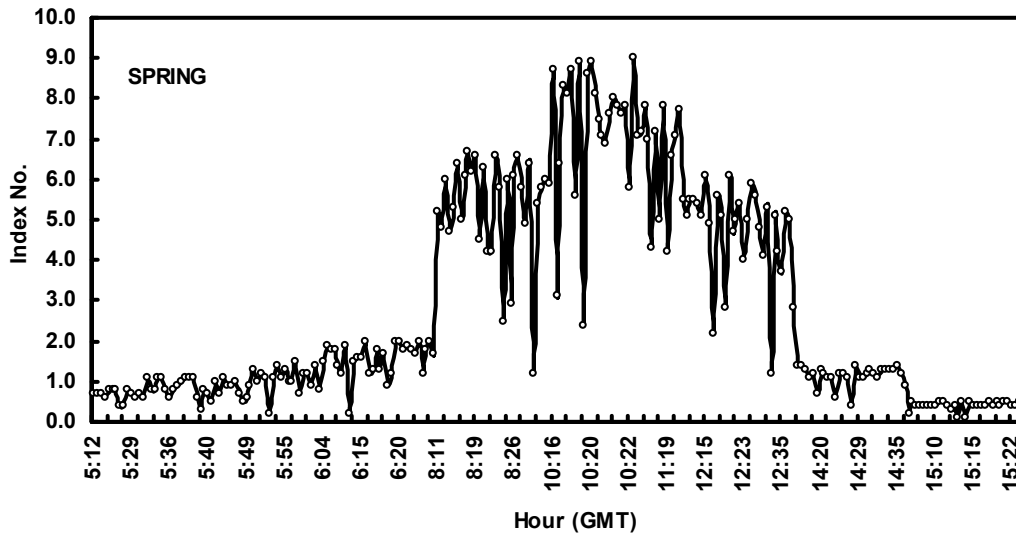


Fig. (2.1): Diurnal variation of DUV and UVI on a clear summer day over Matrouh.

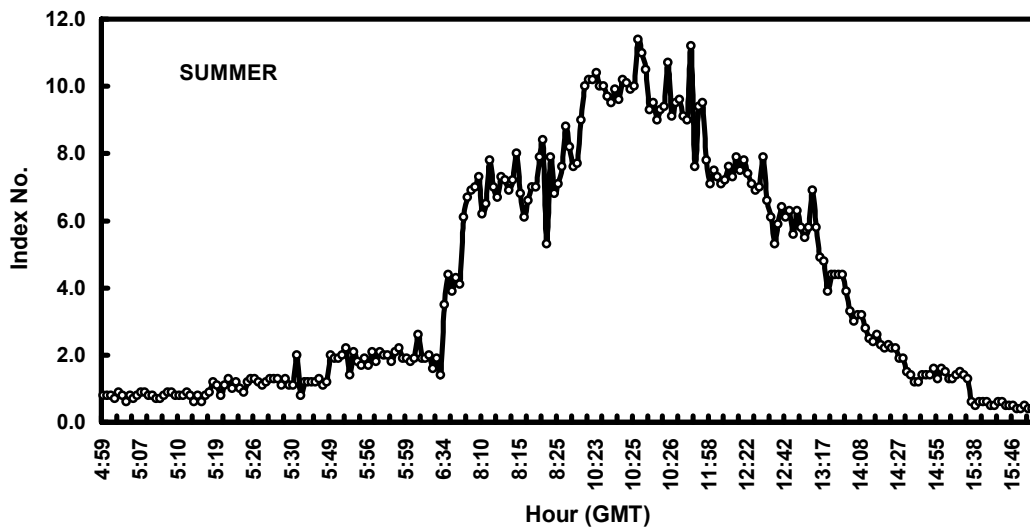
(a) Winter



(b) Spring



(c) Summer



(d) Autumn

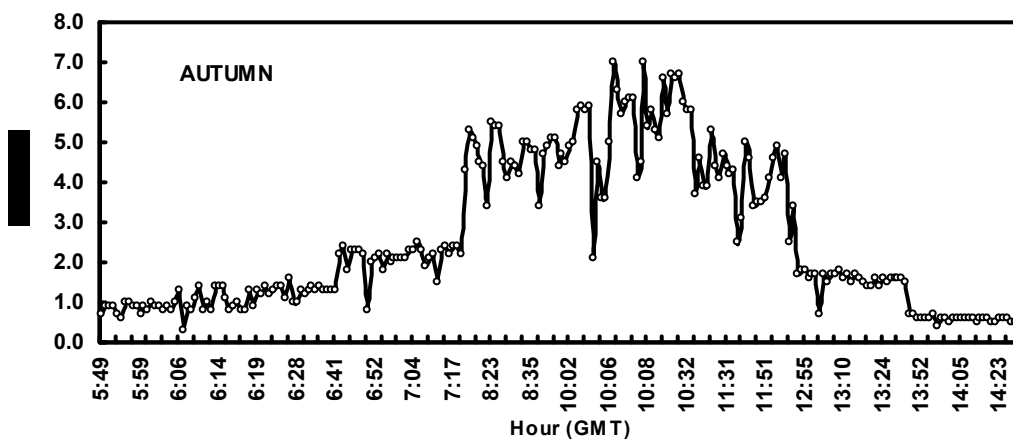


Fig. (2.2): Diurnal variation of UV index over Matrouh at different seasons.

NEEDS AND RECOMMENDATIONS

- Continuity of the rule of the MLF (technical and financial support to Article 5 countries will automatically lead to enabling Egypt and other developing countries to meet the changing requirements after 2010.
- We are in great need for scientific research program in ozone and climate change model.
- We will appreciate assistance to start measurements of vertical ozone distribution advice to elaborate a by ozonesonde especially at Aswan station (tropical area).
- We need technical and financial assistance for the regular calibration of Brewer with the traveling standard.
