ARMENIA

OBSERVATIONAL ACTIVITIES

Column measurements of ozone and other gases/variables relevant to ozone loss.

The measurements of the total ozone are produced on weather station "Arabkir" (40.1N, 44.3E; 1113m above sea level) since 1990 up to present time in city Yerevan by filter ozonemeter M-124.
Since 2000 up to present time the measurements of total ozone (method DS-observations, ADADA wavelengths) are produced also on the south slope of mountain Aragats (40.3N, 44.1E; 2070m a.s.l.) on the regional station #410 of global ozone observation system, created on the weather station "Amberd" (fig.1) and equiped with Dobson-spectrophotometer D-044.
In addition, there is a reserve station for ozone observations on the high-mountain weather station "Aragats" (40.3N, 44.1E; 3227m a.s.l.), equiped with ozonemeter M-124.

Figure1: ***Weather Station "Amberd"***

There are also short-term experimental synchronous observations on weather stations "Arabkir'", "Aragats" and "Sevan" (40.3N, 45.1E; 1927m a.s.l.) in the basin of Sevan Lake.
The measurements of other gases are not produced.

Profile measurements of ozone and other gases/variables relevant to ozone loss

The regular measurements of the vertical distribution of ozone were not produced. There are several experimental Umkehr-observations on weather station "Amberd", as well as results of data processing the synchronous measurements on different-by-height weather stations "Aragats", "Sevan" and "Arabkir".

UV measurements - not produced.

Calibration activities

At June 2004 the calibration of D-044 at the European Regional Dobson Calibration Center (RDCC/E) at Hohenpeissenberg within the regular calibration schedule was executed.

RESULTS FROM OBSERVATIONS AND ANALYSIS

The results of the observations were submitted for Figure 2.

THEORY, MODELLING, AND OTHER RESEARCH

For study of UV effect, the statistical model, linking the skin cancer morbidity of population with UV irradiation is created in the following regions of Armenia: city Yerevan (altitude 1.1–1.2 km a.s.l., town population), Ararat Valey (altitude 0.9–1.0 km a.s.l, rural population) and basin of Sevan Like (altitude around 2km a.s.l., rural population). Main results: the dependency of health criticality of the above mentioned groups of the population towards influence UVR depending on lifestyle and heights of terrain is explored.

DISSEMINATION OF RESULTS

Data reporting

The results of the total ozone measurements are monthly sent to the WOUDC.

Information to the public

Since 2002 on the basis of the information about UV-indexes provided by the Institute of Biological Physics and Biostatistics, University of Veterinary Medicine Vienna (http://i115srv.vu-wien.ac.at/uv/uv-index/uvi_eue.txt) and according to the recommendations of COST-713 Action "UVB Forecasting" is daily calculated and published through mass media forecasts for UV-indexes for mostly inhabited areas of Armenia.

The meanings of UV-indexes for Armenia are in-group of the highest for Europe.

Relevant scientific papers

In 2001 was issued [**1**].
Results of the research of effects UV irradiance are published in [**2**].

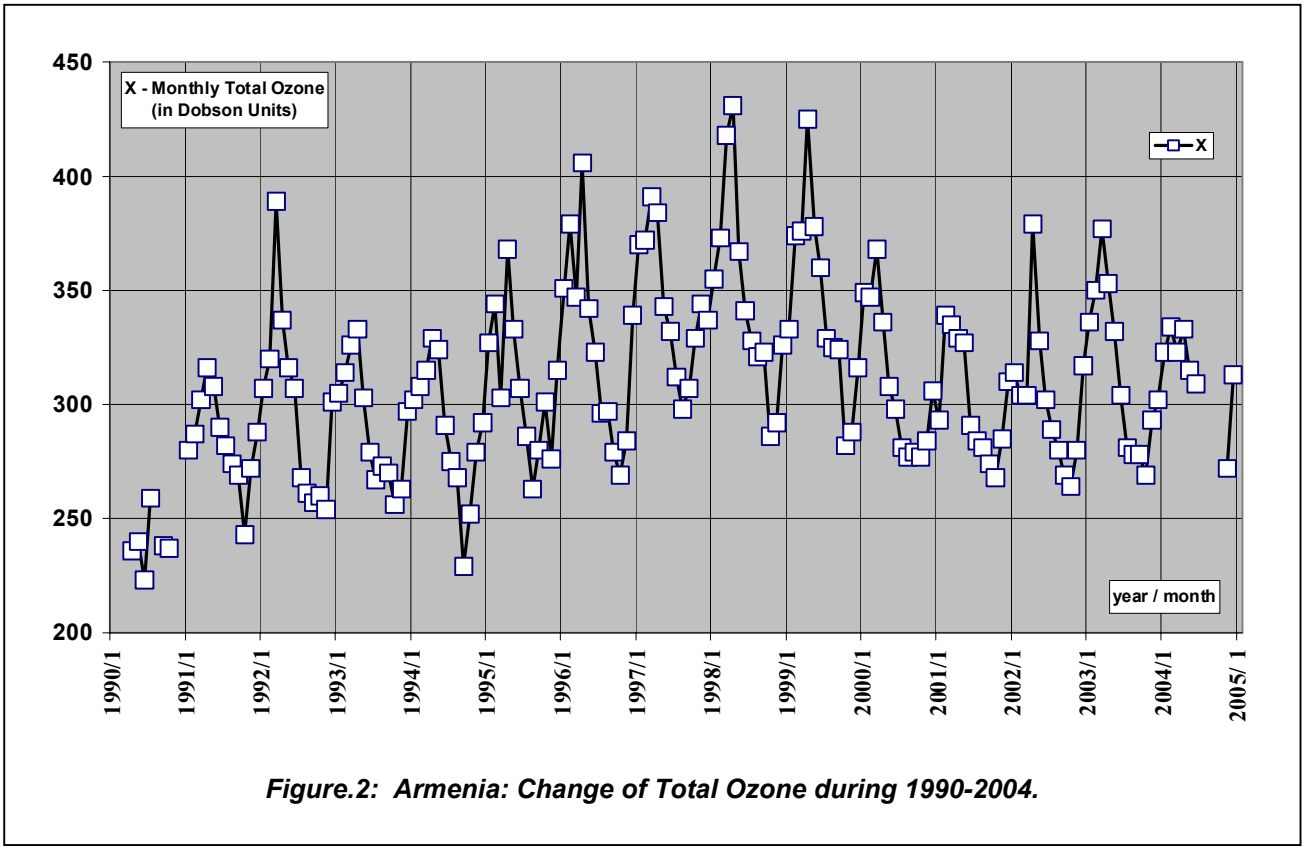

Figure.2: Armenia: Change of Total Ozone during 1990-2004.

PROJECTS AND COLLABORATION

During 1990 - 2002 "The Study on Ozone Layer and Fields of Ultraviolet Radiation on the Territory of Armenia" was executed (Code: 2000-115), financed by state budget of Armenia. Main results: database of the total ozone's dynamics and fields of ultraviolet radiation above the territory of Armenia during 1990-2001.

At present no international and national projects on study of ozone are conducted.

The national project on study of the solar radiation mode for 1980-2004 has just been started.

Execution of Dobson-programme is being implemented with assistance of DWD (Germany) and SOO CHMI (Czech Republic).

FUTURE PLANS

The testing of new instrument - the UV-meter, developed by Institute of the Applied Problems of Physics of Armenia.

NEEDS AND RECOMMENDATIONS

The capacities of weather station "Amberd" allow performing of national and international projects on monitoring of solar radiation, UV climatology, profiling of vertical distribution of ozone with balloon sondes , lidar observations of the composition of atmosphere, transboundary pollution in region of South Caucasus.

References

[1] *Melkonyan D. (2001) "ULTRAVIOLET RADIATION AND YOUR HEALTH" // ISBN 99930-864-5-2.*

[2] *Melkonyan D. (2004) Effect of UV irradiation on skin cancer morbidity in Armenia // Proceedings of the Quadrenial Ozone Symposium "KOS-2004", Vol. II. – s.1132-1133.*

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