

# IRAN

## Introduction:

The first experience in this field was done with a Dobson Ozonometric equipment in Institute of Geophysics (Tehran University) about 20 years ago.

After some times of its usage, with assistance of Meteorological Organization of Iran and cooperation of WMO, this instrument was sent to the United States and Canada for repairing and changing of some parts and then was calibrated. Then with the assistance of Canada, it was installed in Ozonometric Center of Esfahan (in middle of Iran region, 32 52 N, 51 71 E) and it was used for about 2 years. After that, it was transferred to Institute of Geophysics, Tehran University.

## Current Situation:

Then Brewer Ozonometric equipment was brought from Canada and was installed and has been in operation in Esfahan for the past 2 Years.

This equipment not only measures total Ozone automatically but also measures total NO<sub>2</sub> and CO and amount of UV-B rays.

Vertical ozonesonde was installed at Mehrabad station which is able to plot ozone profile of atmospheric layers. After being operated, it was transferred to Ozonometric Center of Esfahan. The Vertical Ozonesonde is working on the basis of electrochemical pile technology. Every other week, Ozonesonde instrument with Radiosonde is sent to the atmosphere and the relevant data has been sent to Ozonometric Center of Canada for more analysis.

The Firooz-Kooh station (north region of Iran near Damavand mountain, 35 43N, 52 34 E) was selected by WMO as a GAW station assistance budgets, equipment for a GAW station for regional usage several places, with the help of WMO experts, the Amin-abad hills were chosen as a suitable place for establishing a new station.

The equipment used in this station is :

- 1- Ozone analyzer instrument for measuring surface ozone. It is under operation but since the computer link is not working properly, it is measured manually every hour by an observer. These measurements are in terms of PPB units and is done on atmospheric background conditions and not on urban conditions. This equipment should be checked and adjusted with the assistance of WMO experts. The calibration can be done in its original place every 2 years. This unit should be calibrated as soon as possible because calibration has not been done for the past 2 years.
- 2- Wet and dry deposition equipment is employed for analyzing rainwater. The parameters that can be measured are PH, conductivity coefficient, cations and anions. But unfortunately the rainwater analysis has not yet been done in this station. This is because the deposition operations are so delicate that some more equipment are needed to be installed.
- 3- Black carbon measuring equipment is employed for gathering black carbons by using special filters through pumping.
- 4- Aerosol sampler is employed for gathering atmospheric suspended particles ( aerosols) by using special filters.
- 5- Sun photometer is used for measuring turbidity of sky and has not been operated yet.
- 6- Synoptic station

## Requirements:

1. There is a need for installing equipment for an upper atmospheric station.
2. Installation of green house equipment would be helpful to enable us to measure green house effects.

### **Future Plans and Activities:**

- Recognizing the vitality of research and observation of UV and ozone fluctuations, and country's obligation to the Vienna Convention,
- Taking into account the recommendations of fourth meeting of Ozone Research Managers, the following activities are planned for the future:
  1. Establishing working groups to conduct the following activities within the relevant governmental and non-governmental organizations. The working groups are responsible to identify the needs, adopting the research framework to define projects on the following issues:
    - Regular UV monitoring, forecasting, and public information services;
    - Research on Environmental impacts of UV increase due to the ozone depletion in different parts of Country covering effects of UV radiation on
      - One. human and animal health,
      - Two. terrestrial and aquatic ecosystems,
      - Three. biogeochemical cycle,
      - Four. air quality,
      - Five. materials
  - Adopt a programme on systematic measurement of ground-based and satellite-based ozone amount;

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