Automatic negative ion monitoring station

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1. Introduction

With the development of society and improvement of life level, we pay much attention to atmospheric environment quality. Especially the concentration of negative ion in the air becomes an important index of atmospheric environment quality. In order to meet the requirement of monitoring negative ion in the air, a patent production of automatic negative ion monitoring station has been developed, and named as WIMD-A series. Automatic data collector, high precision data processor, automatic data storage, intelligent GSM information transmission and high performance data management platform constitute automatic negative ion monitoring station. The station meets the national recommendation criterion and realizes automatic observation from data collection to data transmission.

2. Advantage

Comparing with others negative ion observation instrument, the station owns following advantage:

- It is the first negative observation instrument in the world that can normally work from 0% relative humidity to 100% relative humidity, even supersaturation.
- It is the only monitoring instrument in the world that can work automatically from observation to data transmission.
- It gets rid of alternating current disturbance and can improve data precision.
- It adopts the structure design of barrel shape, and makes all air in the barrel in the effective extent to ensure data collecting precision.

3. Specification

■ Concentration range:

Level A: $10\sim9.999\times10^4$ (ions/cm^3)

Level E: $10^5\sim9.999\times10^8$ (ions /cm^3)

■ Transference rate range: 0.15~1.0 ($cm^2/V\cdot sec$)

■ Relative humidity range: 0~100% R.H.

- Observation resolving power: 10 (ions /cm^3)
- Observation error:

  Ion concentration ≤ ±(10%+10/cm^3)

  Transference rate ≤ ±10%
- Sampling air flow velocity: 180 (cm/sec)
- Time response constant: 15 sec
- The requirement of environment:

Temperature: -20~＋40℃ (can customize to -30~＋50℃ or more extent)

Humidity: 0~ 100% R.H. (even supersaturation)

- Dehumidify mode: Automation
- Data storage capacity: 3 months
- Observation frequency: 1 times/hour
- Power supply: AC220V and DC12V
- Backup power: 4 ~24 hours
- Data transmitting mode: cable or wireless (optional)

4. Prospect

The patent production can observe positive and negative ion. Now the station has been in operation at several provinces of China for over one year, and can Consecutively and steadily run with Low fault rate under extreme weather condition such as low temperature and high humidity. Through ion observation, we can make zoology monitoring and forecast, and meet the requirements of environmental protection, meteorological service and travel service.