A Big Earth Data Platform for Three Poles

**Airborne pollen data at the Qomolangma Station (2011-2013)**

1、Description

Airborne pollen is mainly produced and disseminated during the process of plant flowering, controlled by plant phenology and climatic conditions. As an important bioindicator of plant behavior, airborne pollen can supply information about reproductive phenology, climate and atmospheric circulations. From 2011 to 2013, airborne pollen samples were collected using a volumetric Burkard pollen trap at the Qomolangma Station for Atmospheric and Environmental Observation and Research, Chinese Academy of Sciences (QOMS, 28.21°N, 86.56°E; 4276 m a.s.l.), on the northern slope of the Himalayas. The sampler is a volumetric air-suction device capable of continuously gathering pollen and spore particles. Air is drawn in at a speed of 10 l/min, and airborne particles are deposited on a sticky tape mounted on a drum that makes one complete rotation per week. The tape is changed weekly after a complete rotation. Then, the tape is removed and cut into seven pieces, with each piece representing one day of sampling. The pieces are mounted on slides using glycerin and safranin. Identification and counting of pollen grains were performed under an Olympus BX41 microscope at 400× magniﬁcation; all pollen grains on each slide were counted . Pollen concentration was expressed as the daily pollen grains per cubic meter of air using a constant air intake speed of 10 l/min. The pollen concentration and percentage of each pollen taxon in each year were calculated. The pollen sampling and lab process were followed the standard methods to ensure the authenticity and reliability of the data. The pollen data can provides insights into vegetation response to climate change and has significance for interpreting fossil pollen records.

2、Keywords

Theme：Airborne pollen,Pollen,Vegetation,Phenological phase,Phenology,Pollen,Pollen,Climate indicators,Paleoclimate Reconstruction,Lake sediments
Discipline：Terrestrial Surface,Palaeoenvironment
Places：the northern slope of the Qomolangma (Everest) region
Time：2011-20132011-2013,

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.1572MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：28.21 | - |
| west：86.56 | - | east：86.56 |
| - | south：28.21 | - |

5、Time frame:2011-03-07 00:00:00+00:00--2014-01-06 00:00:00+00:00

6、Reference method

References to data:

LÜ Xinmiao. Airborne pollen data at the Qomolangma Station (2011-2013). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2707052020

References to articles:

Lü, X.M., Paudayal, K.N., Uhl, D., Zhu, L.P., Yao, T.D., Mosbrugger, V. (2020). Phenology and climatic regime inferred from airborne pollen on the northern slope of the Qomolangma (Everest) region. Journal of Geophysical Research: Atmospheres, in review.

7、Supporting project information

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the Second Tibetan Plateau Scientific Expedition and Research Program
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8、Data resource provider

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