A Big Earth Data Platform for Three Poles

**Characteristics of individual particles from biomass combustion in pastoral areas (2020)**

1、Description

Due to the unique lifestyle of residents and single fuel source, the main fuel in the pastoral area of Qinghai Tibet Plateau is dried yak dung. Yak dung is collected in piles or moulded into dung cake, which is stored after air drying. When used for cooking and heating in residences, it is always burned in cast iron stove. The carbonaceous particles released by yak dung burning are almost the only black carbon aerosol emission source in the vast pastoral area besides motor vehicles. This data set was established by measuring the morphology, particle size and element composition of single particles emitted from yak dung combustion in typical pastoral areas of the Qinghai Tibet Plateau. The sampling sites included Dangxiong County in Naqu and Dazi County in Lhasa. The field sampling location were the chimney outlet of residential homes. The particles were collected on the polycarbonate filter membrane and analyzed in the laboratory by means of computer-controlled scanning electron microscope and X-ray energy spectrometer. The environmental single particles emitted from yak dung combustion in pastoral areas include soot aggregates, tar balls, heavy metals containing carbonaceous particles, mineral dust, and soluble salt particles. This data set includes the numer percentages, particle size and their shape factor (aspect ratio, roundness and form factor) of various types of particles with statistical significance, It is not only an effective supplement to the basic data of human activities affecting the atmospheric environment, but also has potential significance for evaluating their optical characteristics, radiation effects, health effects and environmental impact of local source carbonaceous aerosols on the plateau.

2、Keywords

Theme：Atmospheric Quality,elemental composition,individual particle analysis,Aerosol,size distribution,Atmospheric Trace Gase  
Discipline：Atmosphere  
Places：Dangxiong, Dazi  
Time：2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：531.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：30.51 | - |
| west：91.11 | - | east：91.48 |
| - | south：29.78 | - |

5、Time frame:2020-10-26 16:00:00+00:00--2020-11-18 16:00:00+00:00

6、Reference method

References to data:

WANG Qiyuan, HU Tafeng, WU Feng, ZHANG Ningning, DAI Wenting, ZHU Chongshu. Characteristics of individual particles from biomass combustion in pastoral areas (2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2718122021

References to articles:

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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