A Big Earth Data Platform for Three Poles

**Hydrochemistry and persistent organic pollutants in soils from the Issyk-Kul region in the western Tian Shan Mountains, Kyrgyzstan (2018)**

1、Description

Hydrochemistry and persistent organic pollutants in soils were analyzed in Issyk-Kul region from the western Tian Shan Mountains.   
As organchlorine pesticides (OCPs) may be an ecologic threat to mountain environments due to their tendency to deposit and accumulate in mountain regions undergoing long-range air transport, OCPs were analyzed in soils collected from an intermontane basin of the western Tian Shan Mountains, which is the UNESCO protected natural reserve of Issyk-Kul. Total OCP concentrations in the Issyk-Kul region ranged from 4.63 to 414 ng/g dw, of which two extraordinary high OCP concentrations (414 ng/g dw and 213 ng/g dw, respectively) influenced by an abandoned dumping site and urban sewage, respectively, were found. Principal component analysis (PCA) and correlation analysis inferred that the OCP inputs in the east of the Issyk-Kul region were mainly from local endogenous sources, and exogenous input via LRAT processes were prominent in the west and south. Additionally, the isomeric and parent substance/metabolite ratios revealed most pesticides accumulated in this region were from old usage, while DDTs had fresh input because of possibly illegal regional application and a slow degradation from the dumping site. Furthermore, ecological risk assessment revealed that no frequently adverse ecological effects were observed in the Issyk-Kul region, but potential risks on neighbouring organisms induced by p,p’-DDT and γ-HCH in dumping site and urban sewage should be considered when devising an efficient management plan to prevent secondary pollution.

2、Keywords

Theme：Soil,Organic matter,Contaminants,Water Quality/Water Chemistry  
Discipline：Terrestrial Surface  
Places：Issyk-Kul region  
Time：2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.24MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：45.0 | - |
| west：70.0 | - | east：85.0 |
| - | south：39.0 | - |

5、Time frame:2018-07-24 16:00:00+00:00--2018-07-24 16:00:00+00:00

6、Reference method

References to data:

WU Jinglu. Hydrochemistry and persistent organic pollutants in soils from the Issyk-Kul region in the western Tian Shan Mountains, Kyrgyzstan (2018). A Big Earth Data Platform for Three Poles, doi:10.1007/s11629-018-4963-92019

References to articles:

Li, Q., Wu, J., Zhao, Z., et al. (2018). Organochlorine pesticides in soils from the Issyk-Kul region in the western Tian Shan Mountains, Kyrgyzstan: Implication for spatial distribution, source apportionment and ecological risk assessment [J]. Journal of Mountain Science, 15(7), 1520-1531.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

name: WU Jinglu  
unit:   
email: w.jinglu@niglas.ac.cn