A Big Earth Data Platform for Three Poles

**Synchronous observation data set of soil surface roughness in the upstream of Luan River (2018)**

1、Description

The soil surface roughness data set measured simultaneously during the Soil Moisture Experiment in the Luan River (SMELR) in 2018, which covers (1) 30 quadrats in the north-south flight region of 70 km ×12 km typical experimental area, and (2) 8 quadrats in the northeast-southwest flight region of 165 km×5 km complex experimental area. The data were measured on September 17, September 18 and September 20, 2018 respectively. The soil surface roughness along the row (East-West) direction and cross the row (North-South) direction of typical features in each sample area were measured. The surface roughness of the dataset is described using three parameters; root mean square height (RMSH) and correlation length (CL). The root mean square height describes the random surface characteristics, while the correlation length and correlation function describe the periodicity of the surface. The surface roughness was calculated through the steps of soil surface height digitization, slope correction, periodic correction, and roughness calculation.

2、Keywords

Theme：Soil,Surface roughness,Soil moisture,Hydrology,Terrestrial Surface Remote Sensing,Ground verification information  
Discipline：Terrestrial Surface  
Places：Luan River  
Time：2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.1MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：43.0 | - |
| west：115.5 | - | east：117.5 |
| - | south：41.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

GUO Peng. Synchronous observation data set of soil surface roughness in the upstream of Luan River (2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Soil.tpdc.2716552021

References to articles:

阎广建, 赵天杰, 穆西晗, 闻建光, 庞勇, 贾立, 张永光, 陈德清, 姚崇斌, 曹志宇, 雷永荟, 姬大彬, 陈良富,柳钦火, 吕利清, 陈镜明, 施建成. (2021). 滦河流域碳、水循环和能量平衡遥感综合试验总体设计. 遥感学报, 25(4), 856-870.  
  
Zhao, T.J., Shi, J.C., Lv, L.Q., Xu, H.X., Chen, D.Q., Cui, Q., Jackson, T.J., Yan, G.J., Jia, L., Chen, L.F., Zhao, K., Zheng, X.M., Zhao, L.M., Zheng, C.L., Ji, D.B., Xiong, C., Wang, T.X., Li, R., Pan, J.M., Wen, J.G., Yu, C., Zheng, Y.M., Jiang, L.M., Chai, L.N., Lu, H., Yao, P.P., Ma, J.W., Lv, H.S., Wu, J.J., Zhao, W., Yang, N., Guo, P., Li, Y.X., Hu, L., Geng, D.Y., & Zhang, Z.Q. (2020). Soil moisture experiment in the Luan River supporting new satellite mission opportunities. Remote Sensing of Environment, 240.  
  
赵天杰, 施建成, 徐红新, 孙彦龙, 陈德清, 崔倩, 贾立, 黄硕, 牛升达, 李秀伟, 阎广建, 陈良富, 柳钦火, 赵凯, 郑兴明, 赵利民, 郑超磊, 姬大彬, 熊川, 王天星, 李睿, 潘金梅, 闻建光, 穆西晗, 余超, 郑姚闽, 蒋玲梅, 柴琳娜, 卢麾, 姚盼盼, 马建威, 吕海深, 武建军, 赵伟, 杨娜, 郭鹏, 李玉霞, 胡路, 耿德源, 张子谦,胡建峰, 杜爱萍. (2021). 闪电河流域水循环和能量平衡遥感综合试验. 遥感学报, 25(4), 871-887.  
  
孟春红, 郭鹏, 赵天杰, 杨纲, 李西灿, 王博, 万红. (2021). 地表粗糙度的测量计算方法及其对微波辐射散射的影响分析. 遥感技术与应用, 36(3), 92-704.

7、Supporting project information

Satellite observation and simulation studies of the land surface water and energy exchange processes and its effects on global changes  
Research on megered method formulti source soil moisture

8、Data resource provider

name: GUO Peng  
unit:   
email: guopeng@sdau.edu.cn