时空三极环境大数据平台

**Integrated hydrometeorological – snow – frozen ground observations in the alpine region of the Heihe River Basin, China**

英文标题：Integrated hydrometeorological – snow – frozen ground observations in the alpine region of the Heihe River Basin, China

1、摘要

Alpine region is an important contributor in riverine and watershed ecosystems, which supplies freshwater and stimulates specific habitats of biodiversity. In parallel, extreme events (such as flood, wildfire, early snowmelt, drought and etc.) and other perturbations may reformat the hydrological processes and eco-functions in the area. It is then critical to advance a predictive understanding of the alpine hydrological processes through data-model integration. However, several formidable challenges, including the cold and harsh climate, high altitude and complex topography, inhibit complete and consistent data collection where/when needed, which hinders the associated development of interdisciplinary research in the alpine region. The current study presents a suite of datasets consisted of long-term hydrometeorological, snow cover and frozen ground data for investigating watershed science and functions from an integrated, distributed and multiscale observation network in the upper reaches of the Heihe River Basin (HRB) in China. Gap-free meteorological and hydrological data were monitored from the observation network connecting a group of automatic meteorological stations (AMSs), wireless sensors network (WSN) and runoff measurement spots. In addition, to capture snow accumulation and ablation processes, with the state-of-the-art techniques and instruments, snow cover properties were collected from a snow observation superstation. High-resolution soil physics datasets were also obtained to capture the freeze-thaw processes from a frozen ground observation superstation. The up-to-date datasets have been released to scientists with multidisciplinary backgrounds (i.e. cryosphere, hydrology, and meteorology) and expected to serve as a testing platform to provide accurate forcing data, validate and evaluate remote sensing data and distributed models to a broader community.

2、关键词

主题关键词：
学科关键词：
地点关键词：Alpine region, Heihe River Basin
时间关键词：2014 to 2017

3、数据细节

1.比例尺：None

2.投影：

3.文件大小：159.0MB

4.数据格式：None

4、空间范围

|  |  |  |
| --- | --- | --- |
| - | 北：39.09 | - |
| 西：98.57 | - | 东：101.16 |
| - | 南：37.72 | - |

5、时间范围2014-01-22 16:00:00+00:00--2018-01-22 15:59:59+00:00

6、引用方式

数据的引用:

CHE Tao, LI Xin, LIU Shaomin, LI Hongyi, XU Ziwei, TAN Junlei, ZHANG Yang, REN Zhiguo, XIAO Lin, DENG Jie, MA Mingguo, WANG Jian, YANG Xiaofan. Integrated hydrometeorological – snow – frozen ground observations in the alpine region of the Heihe River Basin, China. 时空三极环境大数据平台, DOI:10.3972/hiwater.001.2019.db, CSTR:18406.11.hiwater.001.2019.db, 2018.[CHE Tao, DENG Jie, XIAO Lin, LI Hongyi, REN Zhiguo, WANG Jian, ZHANG Yang, MA Mingguo, YANG Xiaofan, LIU Shaomin, XU Ziwei, TAN Junlei, LI Xin. Integrated hydrometeorological – snow – frozen ground observations in the alpine region of the Heihe River Basin, China. A Big Earth Data Platform for Three Poles, DOI:10.3972/hiwater.001.2019.db, CSTR:18406.11.hiwater.001.2019.db, 2018]

文章的引用:

Che, T., Li, X., Liu, S., Li, H., Xu, Z., Tan, J., Zhang, Y., Ren, Z., Xiao, L., Deng, J., Jin, R., Ma, M., Wang, J., & Yang, X. (2019). Integrated hydrometeorological, snow and frozen-ground observations in the alpine region of the Heihe River Basin, China. Earth System Science Data, 11, 1483-1499

7、资助项目信息

Strategic Priority Research Program of the Chinese Academy of Sciences
国家自然科学基金(91425303)

8、数据资源提供者

姓名: CHE Tao
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: chetao@lzb.ac.cn

姓名: LI Xin
单位: Institute of Tibetan Plateau Research,Chinese Academy of Sciences
电子邮件: xinli@itpcas.ac.cn

姓名: LIU Shaomin
单位: Beijing Normal University
电子邮件: smliu@bnu.edu.cn

姓名: LI Hongyi
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: lihongyi@lzb.ac.cn

姓名: XU Ziwei
单位: Beijing Normal University
电子邮件: xuzw@bnu.edu.cn

姓名: TAN Junlei
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: tanjunlei@lzb.ac.cn

姓名: ZHANG Yang
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: zhangyang@lzb.ac.cn

姓名: REN Zhiguo
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: rzgehu@lzb.ac.cn

姓名: XIAO Lin
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: xiaolin@lzb.ac.cn

姓名: DENG Jie
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: dengj2014@lzu.edu.cn

姓名: MA Mingguo
单位: Southwest University
电子邮件: mmg@swu.edu.cn

姓名: WANG Jian
单位: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences
电子邮件: wjian@lzb.ac.cn

姓名: YANG Xiaofan
单位: Beijing Normal University
电子邮件: xfyang@bnu.edu.cn