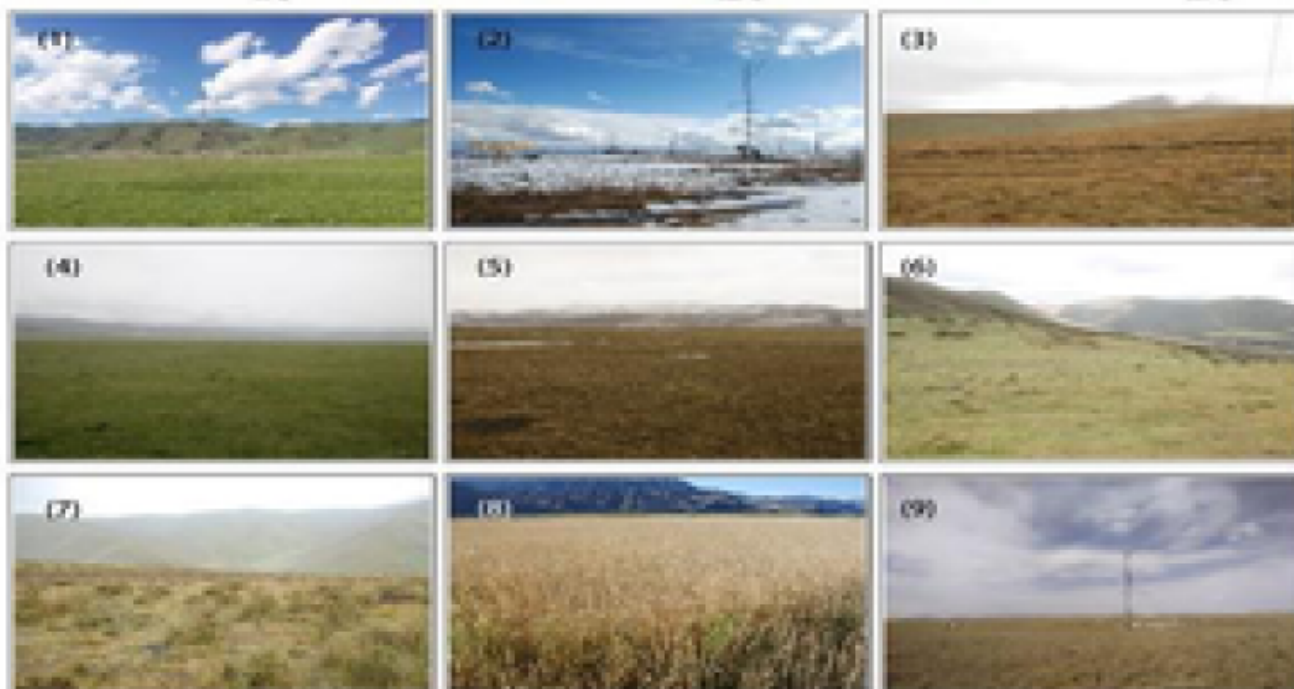
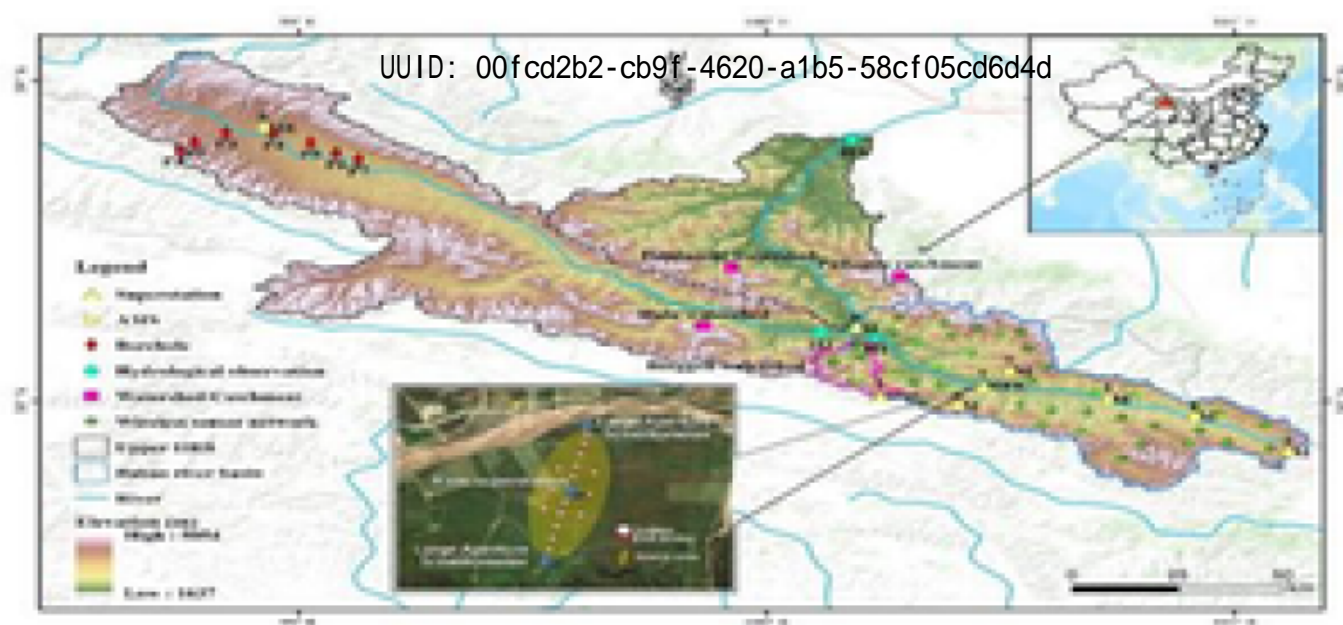




Cold and Arid Regions Science Data Center

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



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Abstract

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.

Keywords

Theme: precipitation, snow depth, frozen ground, snow,
Place: Alpine region, Heihe River Basin,
Temporal: 2014 to 2017,
Discipline: remote sensing,
Statrum:

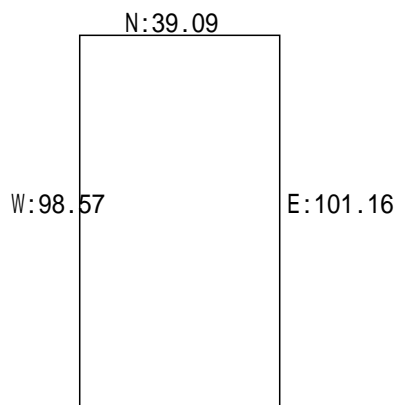
ISO 19115 Category

Category: geoscientificInformation

Detail

Project: +proj=longlat +datum=WGS84 +no_defs
Data Volume(MB): 365
Data Format: *.xlsx

Position and Thumbnail



Temporal Range

Start: 2017-12-04

End:

Citation

Recommended Publications

DOI

10.3972/hiwater.001.2019.db

Funding

Limitation

1. The dataset is generated from the "Heihe Watershed Allied Telemetry Experimental Research (HiWATER)". User must have a clear statement in the article of the original data source and cite the dataset and papers in the Citation section.

Online Resources

1. <ftp://ftp2.westgis.ac.cn>
2. <http://card.westgis.ac.cn>

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