**Dataset Name:**

Dataset for Permafrost Thawing in the Tibetan Plateau

**Uploader:**

Taihua Wang, Tsinghua University ([wangtaihua@mail.tsinghua.edu.cn](mailto:wangtaihua@mail.tsinghua.edu.cn))

**Description:**

This datasets include four directories, which are respectively:

1. Historical Ta and P

This directory includes the bias-corrected daily air temperature and precipitation data during 1980-2019 used as the input data for historical simulation. ERA5 reanalysis dataset is selected as the background field and quality-controlled observations at 97 meteorological stations within and surrounding the Tibetan Plateau have been used for bias correction.

2. Permafrost Distribution

The simulated historical permafrost distribution in 1980 and 2019, and the projected permafrost distribution in 2060 and 2100 respectively under SSP1-2.6, SSP2-4.5 and SSP5-8.5 in the Tibetan Plateau.

0: area without permafrost;

1: area underlain by permafrost without talik;

2: area underlain by permafrost with talik;

3. Permafrost Table Depth

The simulated spatial distribution of permafrost table depth in 1980 and 2019, and the projected spatial distribution of permafrost table depth in 2060 and 2100 respectively under SSP1-2.6, SSP2-4.5 and SSP5-8.5 in the Tibetan Plateau. For the area underlain by permafrost without talik, the permafrost table depth is equivalent to active layer thickness. The scope of near-surface permafrost is defined as the regions where permafrost table depth is less than 3 m, that is, permafrost exists in the top 3 m soil layer.

unit: m

4. TP Sub-region Scope

A shape file for the scope of the 10 sub-regions in the Tibetan Plateau.

**Reference:**

Wang T., et al. (2021). Widespread permafrost thawing due to climate change and its hydrological implications on the Tibetan Plateau. (submitted and under review)