

Interactive comment on “Thermal state of the active layer and permafrost along the Qinghai-Xizang (Tibet) railway from 2006 to 2010” by Q. Wu et al.

Anonymous Referee #2

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The main contribution of the manuscript is in providing new permafrost temperature and ALT data from the Qinghai-Xizang (Tibet) Plateau. However, to be truly valuable, the data included in the paper should be accompanied by more detailed site descriptions. Such critical information as climate, vegetation, soils and proximity to human disturbance/structures are missing. For example the “Site Description” section just review the basic ground thermal regime information, which is somewhat redundant since the results-related sections, graphs, and tables essentially do the same. In addition, the geographic locations mentioned in the text (e.g. mountain ranges, basins) are not labeled in figure 1. Authors claim that sites are located in undisturbed, “natural” conditions. However, the discussion attributes the most significant ALT changes (site WL3)

C1337

to “sand protection facility.” This raises the concern about anthropogenic influences at this and other sites. In general, since the basic climate information and site descriptions are missing it is impossible to interpret the results.

Below I provide several specific comments:

- 1) Section 2.1 should include detailed information on climate, surface characteristics, and disturbance/proximity to structures for sites used in analysis. Some of this information can/should be included in table 1.
- 2) Section 2.2: It is unclear how many thermistors are on each string. Information on thermistor spacing should also be included. This info is critical for assessing the accuracy of ALT estimation by interpolation.
- 3) Section 2.3: Interpolation technique used to estimate ALT should be briefly described
- 4) Section 3 and 4: Without climate (e.g. air temp, precipitations) and site description (e.g. vegetation, terrain, exposition) the values presented in the paper are just numbers. Impossible to interpret.
- 5) Figures 2 and 3 and Tables 2-4: Should include climate (at least air temperature) data.
- 6) Section 5: Discussion is rather meaningless without supporting information on climatic and edaphic characteristics for sites. What are “sand protection facilities?” Site WL3 should probably be excluded from analysis.

Interactive comment on The Cryosphere Discuss., 5, 2465, 2011.

C1338