

Dear Editor, I have read the reviewer's proposed articles. I am grateful for your patience in improving this issue.

*I still have a problem with the statement in line 34 "In a cold climate with MAAT down to -12°C, taliks are almost certain to be avoided (Walvoord and Kurylyk, 2016)."*

We edit this sentence to:

"For continuous permafrost of the East Siberia, taliks can exist under only specific condition because of having severe climate."

And also modify discussion to:

"The interactions between groundwater and permafrost have been examine in a numerous study (e.g. Ge et al., 2011; Kane et al., 2013; Walvoord and Kurylyk, 2016). But the features of floodplain taliks for Kolyma region are considered rather recently and are not well understood (Mikhailov, 2015)."

Having read the publications, I summarize a few conclusions about them:

1. Parazoo et al. (2018)

I cannot comment on Pazollo's paper because it contains many generalizations and ambiguities. My task was to show the specific features of the temperature regime of a certain kind of taliks. Even a brief review of the article confused me, especially the location of weather stations and their grouping (e.g. Oymyakon, Table 1). Unfortunately, I am not well and not sure in this topic.

Site	Location
Drughina	145.0° E, 68.3° N
Ustmoma	143.1° E, 66.3° N
Chumpuruck	114.9° E, 60.7° N
Lensk	114.9° E, 60.7° N
Macha	114.9° E, 60.7° N
Oimyakon	114.9° E, 60.7° N
Tongulakh	114.9° E, 60.7° N
Uchur	114.9° E, 60.7° N
Chaingda	130.6° E, 59.0° N

### Synop Information for UEMJ (24688) in Oymya

The following information is known about UEMJ. If you think that any information is incorrect, then p  
It is *possible* that this page will report a problem where no problem exists. If you believe that this has h  
give it a week before commenting.

#### Registered Location

Latitude: 63° 15' 6" N (deg min sec), 63.2516° (decimal), 6315.09N (LORAN)  
Longitude: 143° 11' 6" E (deg min sec), 143.1851° (decimal), 14311.10E (LORAN)  
Elevation: 741 metres (2431 feet) -- validated against 722 metres (2369 feet) from Geonames  
WMO Id: 24688  
Location: Oymyakon|Oimyakon|Ebe, SA, Russian Federation

2. Rangel et al (2021)

Rangel's article is quite good, I am grateful to the reviewer, I will add it to my collection. The idea of identification is very promising, I have plans to carry out geophysical work in my region. However, the taliks considered are related to the drained lakes. In our publication we consider zones of intensive water exchange.

3. Nikolsky et al (2017)

Nikolskiy's paper deals more with flat areas, although this does not diminish its value. It is very good. However, in the conclusion of the article the authors themselves point out that the proposed methodology is more suitable for estimation of emission rather than for assessment of talik formation.

4. Obu et al (2019)

Obu's article. Talik are practically not considered.

As far as the V.M. Mikhailov's book, which reveals the basic conditions for the existence of floodplain taliks, is not translated into English, I have cited the article by Walvoord. In Walvoord's article I wanted to point out the following quote.

development (Nelson et al., 2001). Talik evolution initiates as heat is conducted into permafrost from a heat source at a temperature above 0°C. Once subsurface water flowpaths become connected through permafrost (talik breakthrough), advection can potentially add to the transfer of heat and accelerate thaw given sufficient subsurface  $K$  (Rowland et al., 2011; Wellman et al., 2013; McKenzie and Voss, 2013; Fig. 3b).

*Line 73:*

*The type of drilling rig and, if applicable, the conditions during drilling would be interesting to know if there could have been any influence of the drilling on the temperature measurements. But it is probably no longer possible for the deep borehole to trace everything after more than thirty years.*

*Line 80:*

*But, for shallow drilling the type of drilling rig should still be known. Then the measured values could be better compared with other measured values of the Global Terrestrial Network for Permafrost (GTN-P)*

The shallow borehole was drilled by hammer rig with air-flow circulation. After examining temperature fluctuation we assume that drilling impact is almost absent.

Thank you again for your hard work and patience.