

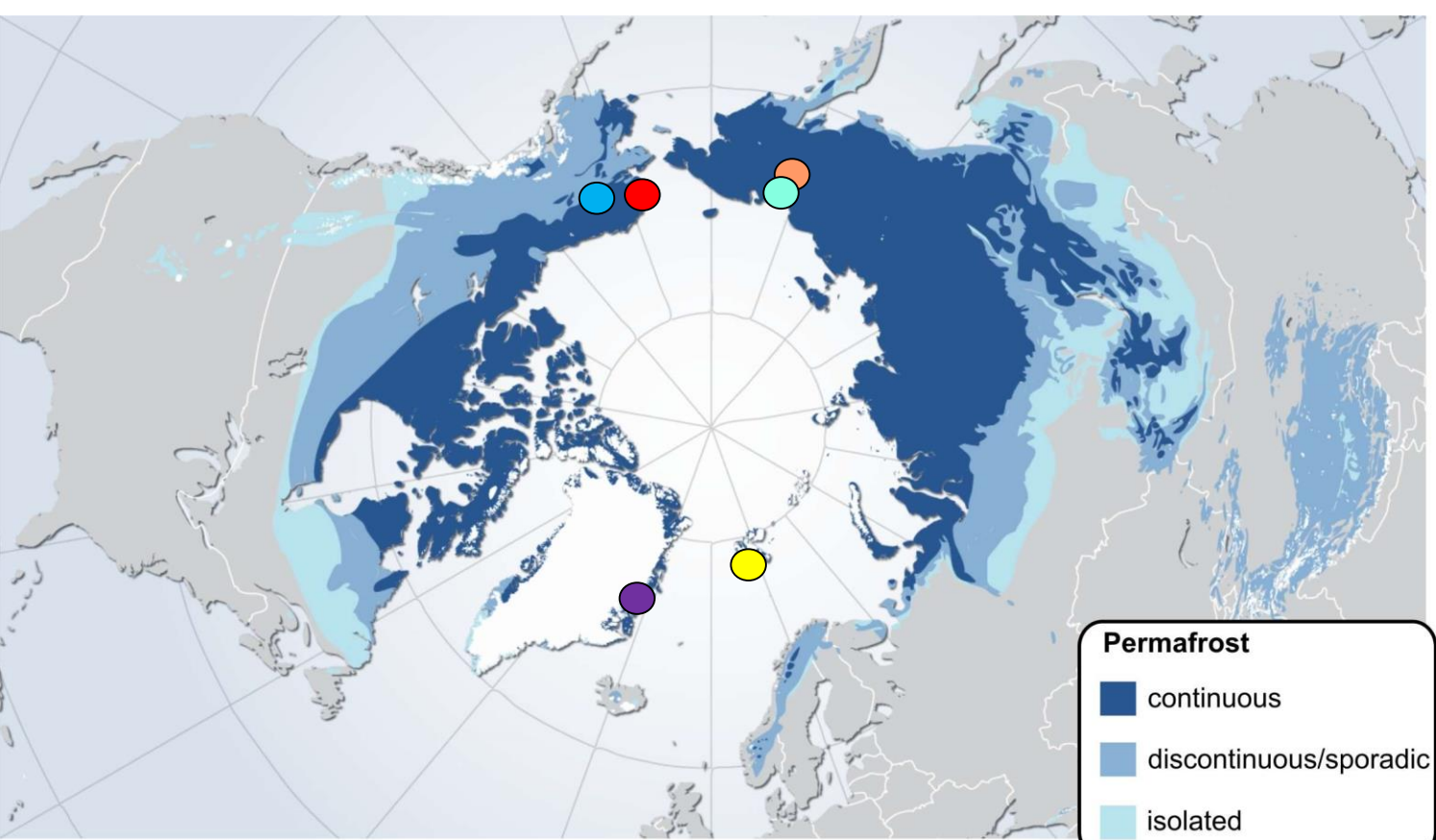
FIELD SITES

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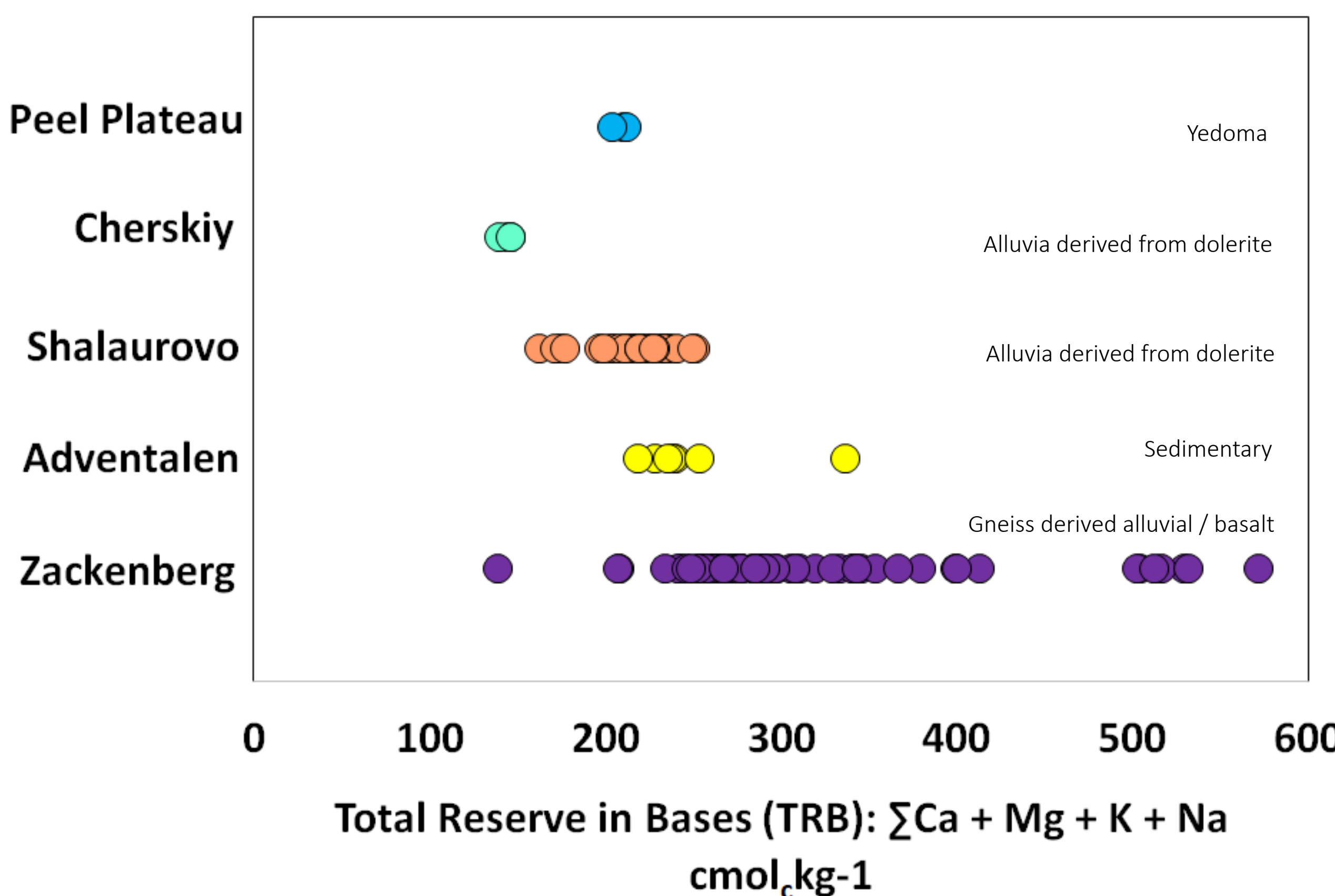


How does the soil mineral reserve with vary with

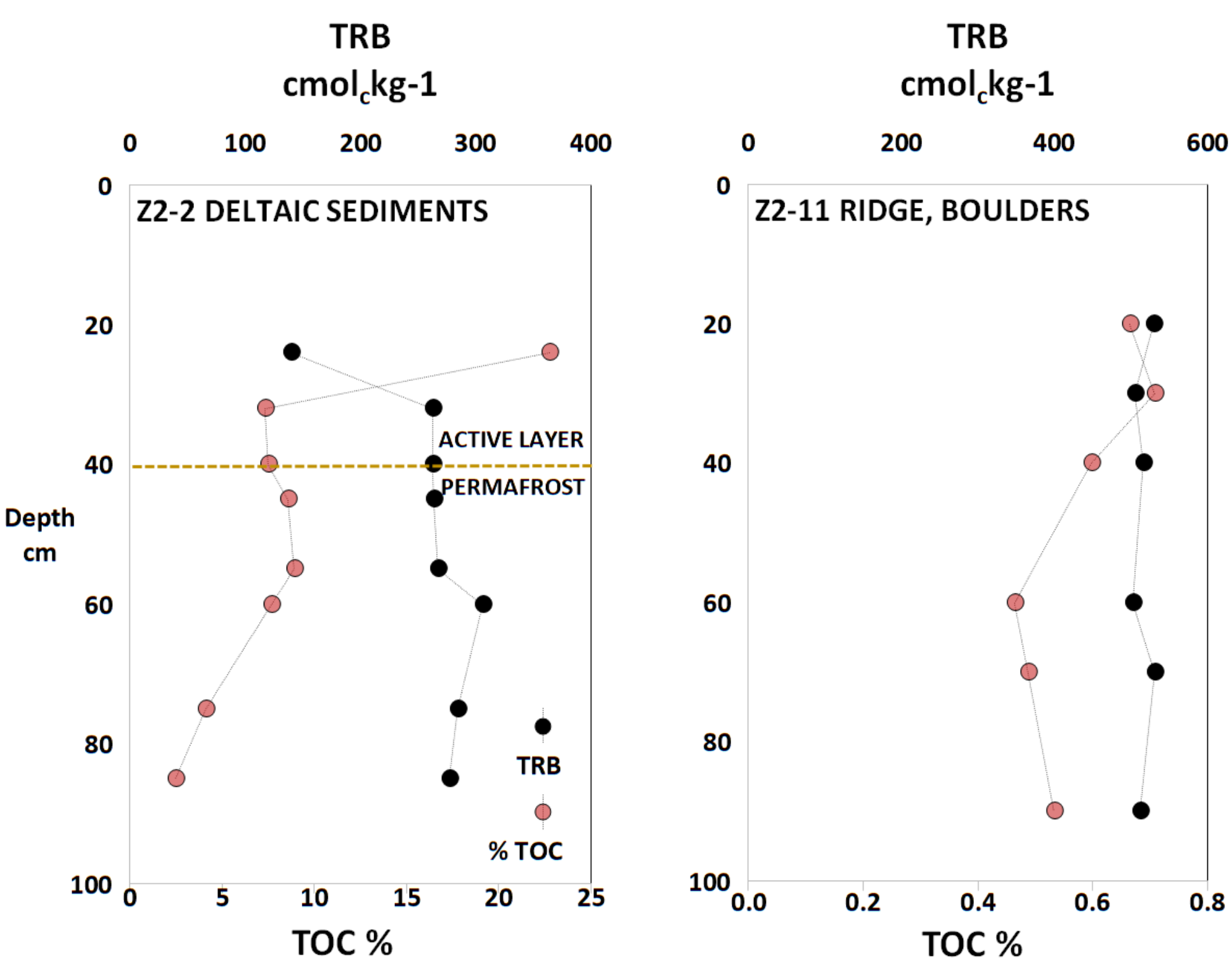
- SPACE (different lithology, type of deposit, topography)
- DEPTH (active layer vs permafrost)



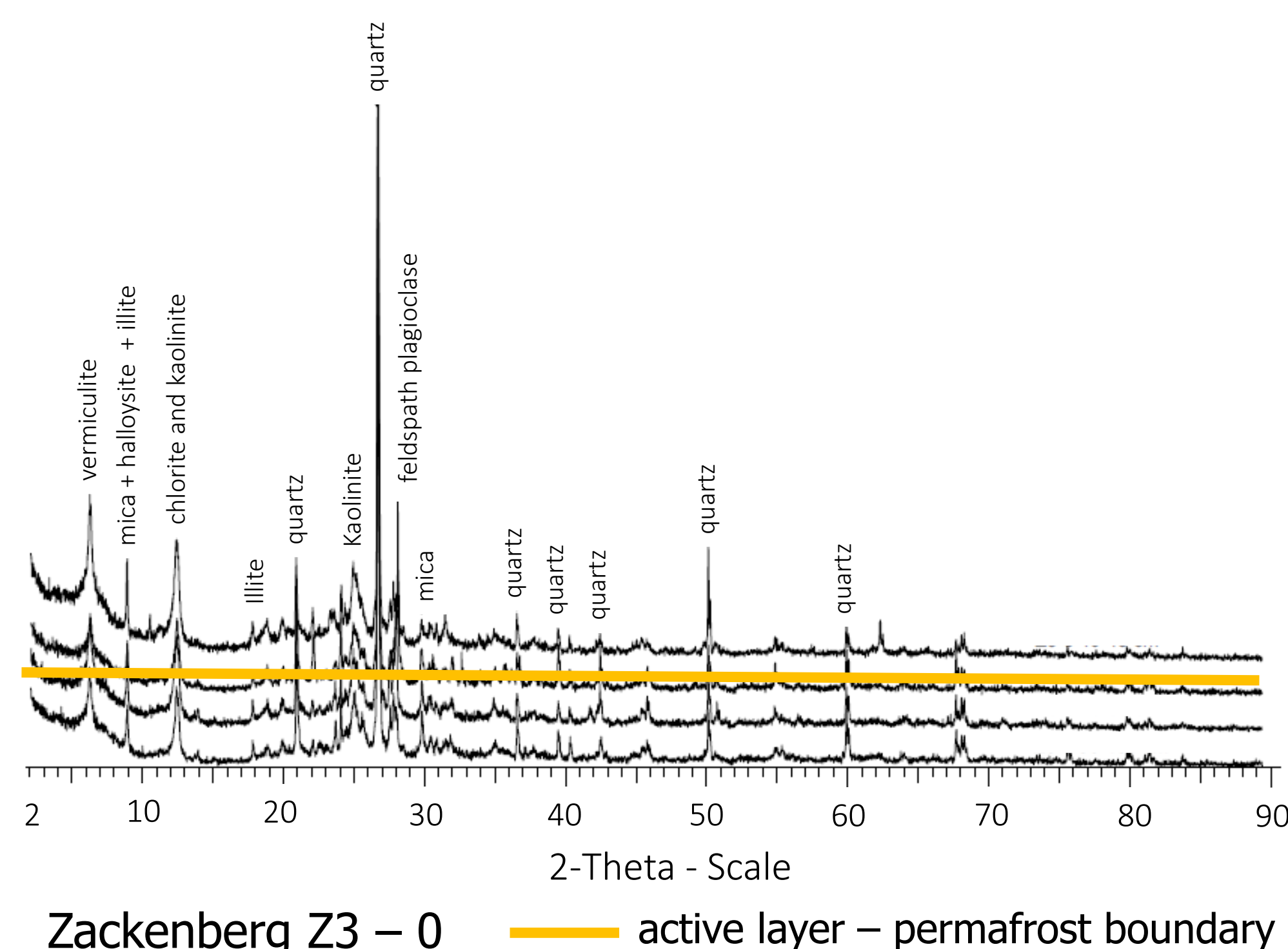
- TRB influenced by lithology



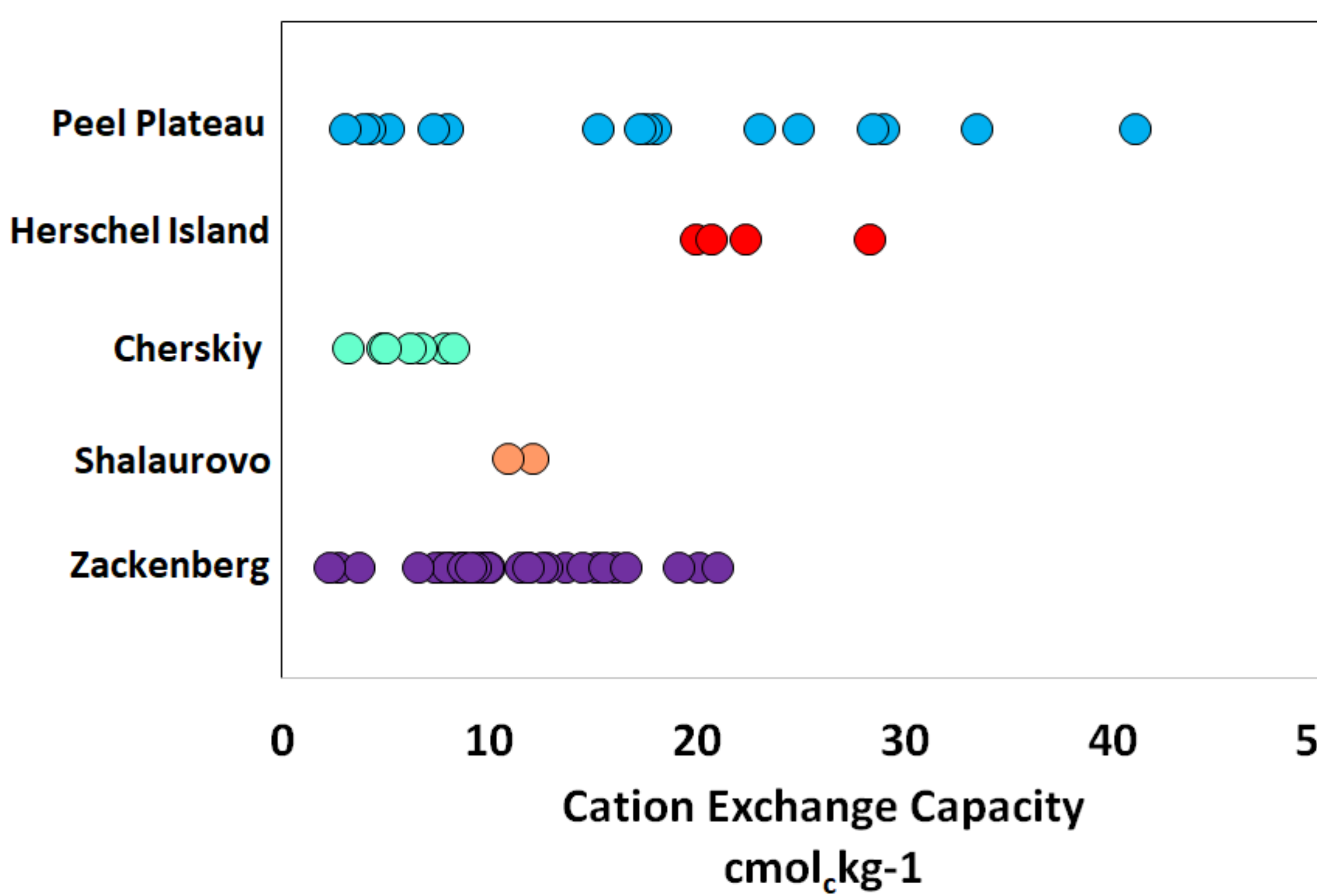
- TRB values in active layer and permafrost soils, dependent on type of sediment deposit



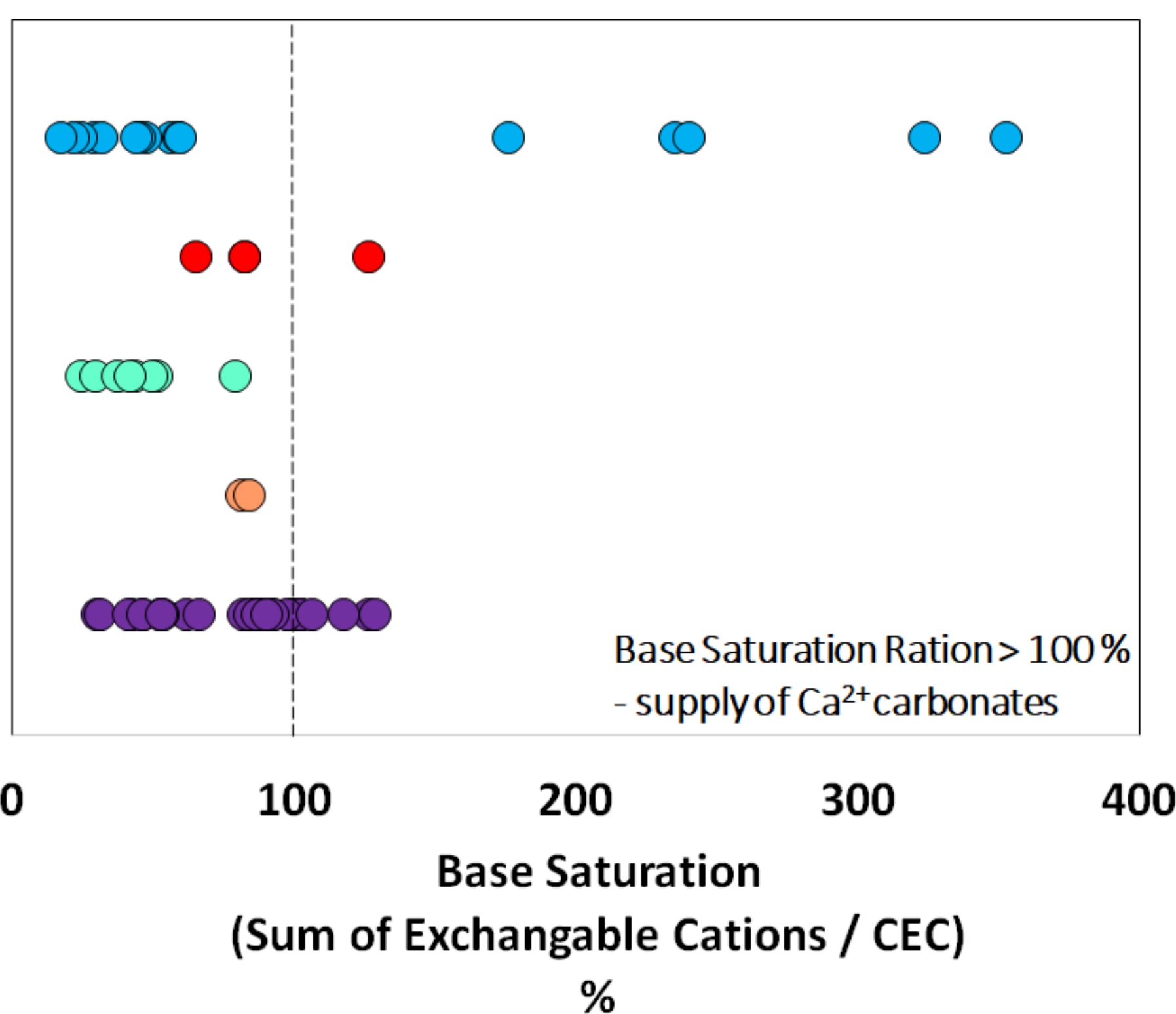
- Homogeneous mineralogy between the active layer and permafrost soils



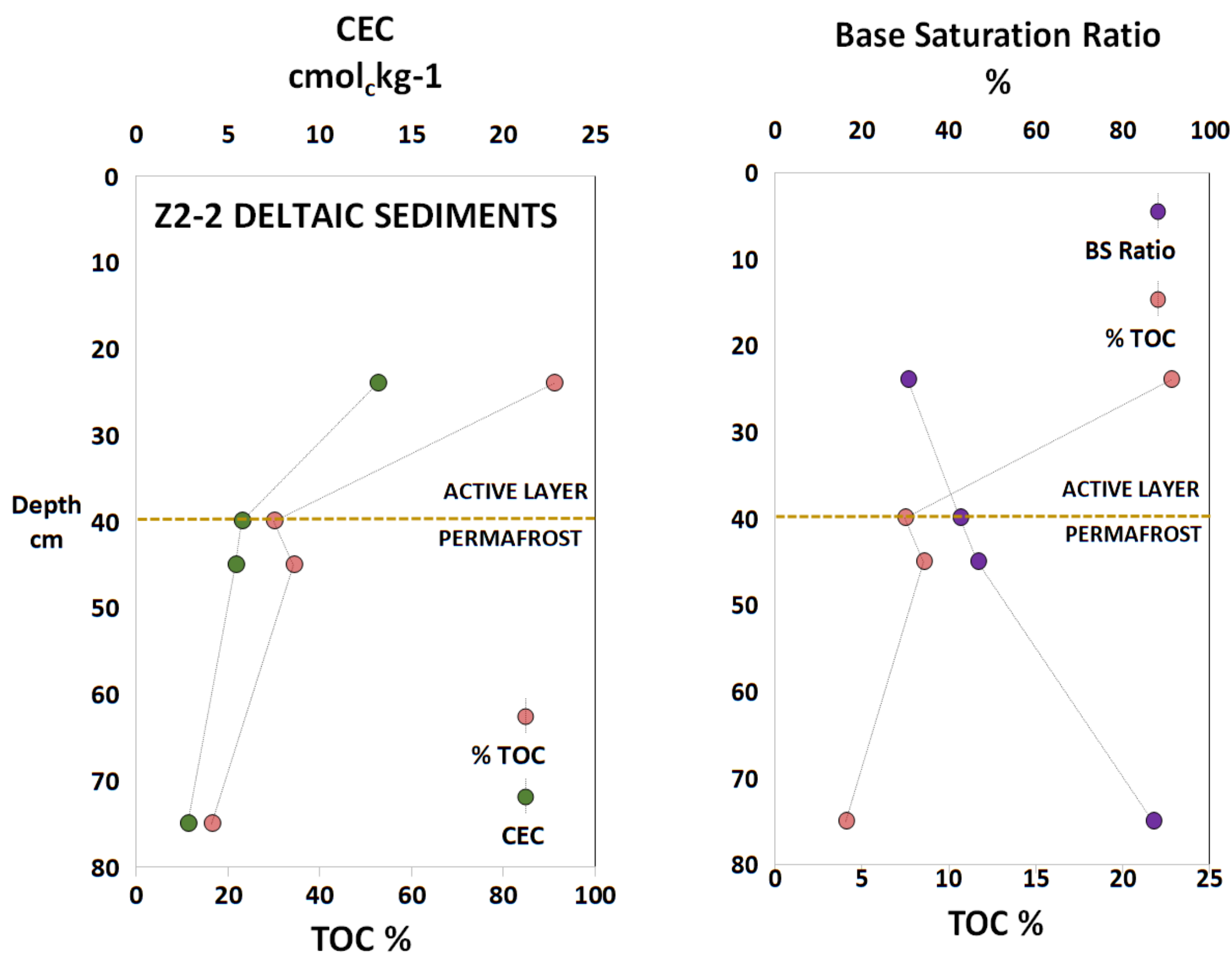
- Range of CEC values across sites related to soil organic carbon content ($R^2 = 0.75$)



- Base Saturation Ratio is higher on mountain slopes compared to lowlands

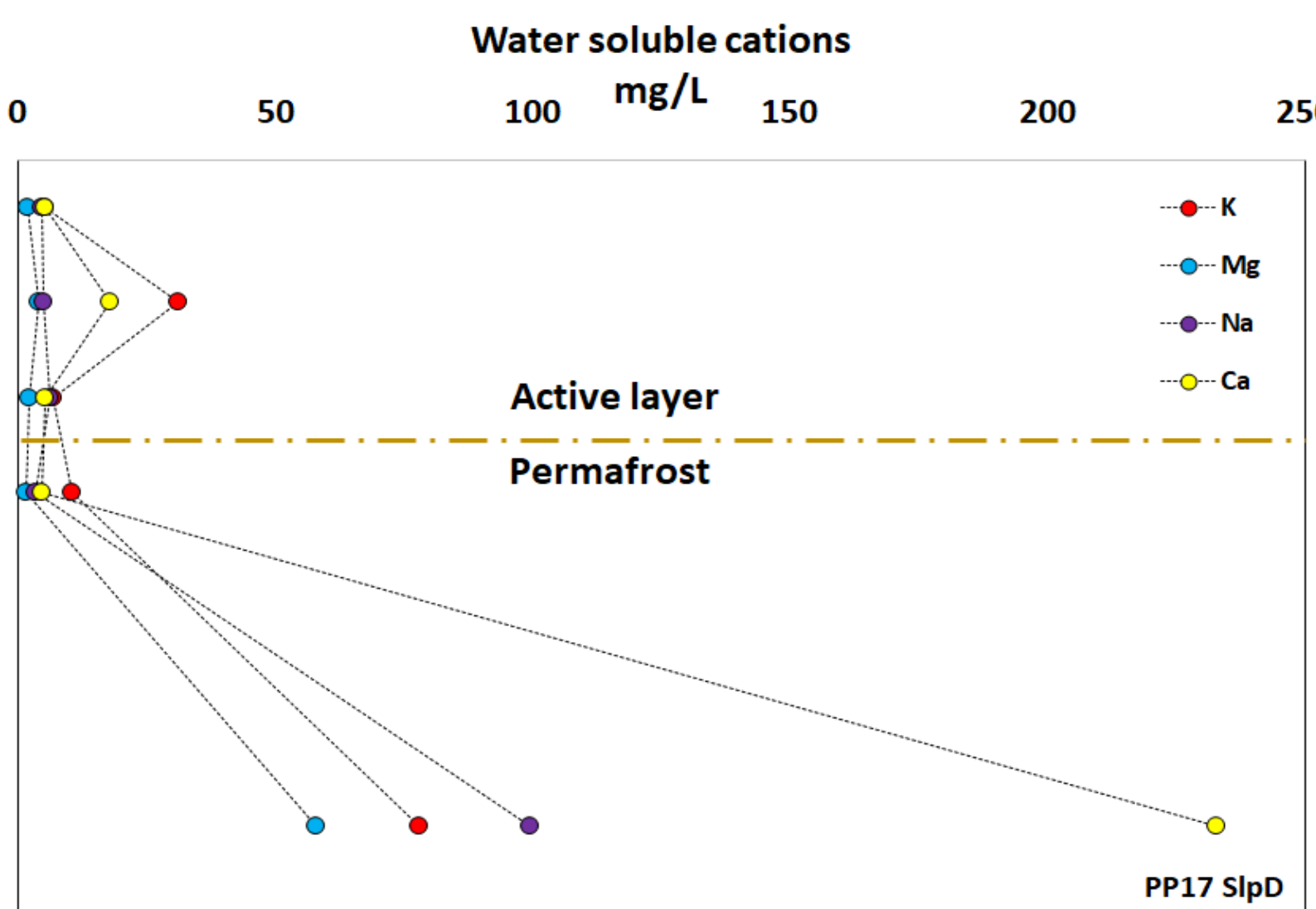


- Base Saturation Ratio increases with depth



- Slumping exposes permafrost soil on Peel Plateau

- Highest concentrations of water soluble cations in the permafrost horizon relative to the active layer, for all sites



- Potential for enhanced release of cations upon permafrost thaw or during slumping of the permafrost horizon.

- **Conclusion:** potential for nutrient hotspots due to storage of cations in permafrost soils.

- **Implication:** enhanced release of cations with increasing active layer depth and slumping – enhanced supply of cations to vegetation and microbial processes – implications for the permafrost carbon pool.

- **Future work:** contribute more data to build a Permafrost Mineral Reserve data base. This requires access to archived active layer and permafrost soil samples from around the Arctic.

⁽¹⁾Jansson, J.K & Tas, N., 2014. *Nature Reviews Microbiology* 12: 414-425

⁽²⁾ Palmtag et al., 2015. *Arctic, Antarctic and Alpine Research* 47: 71-88.

⁽³⁾ Alfredsson et al., 2016. *Global Biogeochemical Cycles*, 30: 479-500.

(4) Vonk et al., in prep

We are very grateful to –orien Vonk, Lisa Broder, George Tanski for providing samples from Peel Plateau and Herschel Island. - Daniel Conley and Hanna Alfredsson for providing samples from Adventalen, Svalbard. – Peter Kuhry and Juri Palmtag for providing samples from Greenland and Siberia. Anne Iserentant and H  l  ne Dailly are acknowledged for their valuable contribution to the water extraction and ICP-AES analysis

This research is funded by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (ERC Starting Grant, WeThaw, grant agreement n  714617 to S.O.)