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Cenozoic salt remobilization in the Baltic Sea sector of the northeastern North German Basin margin

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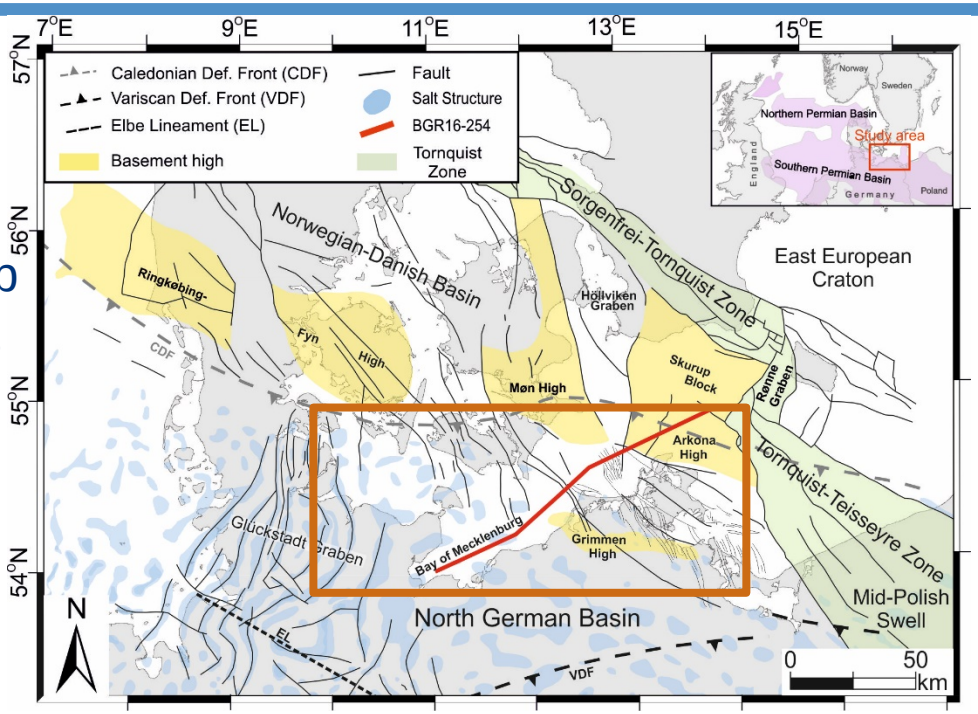
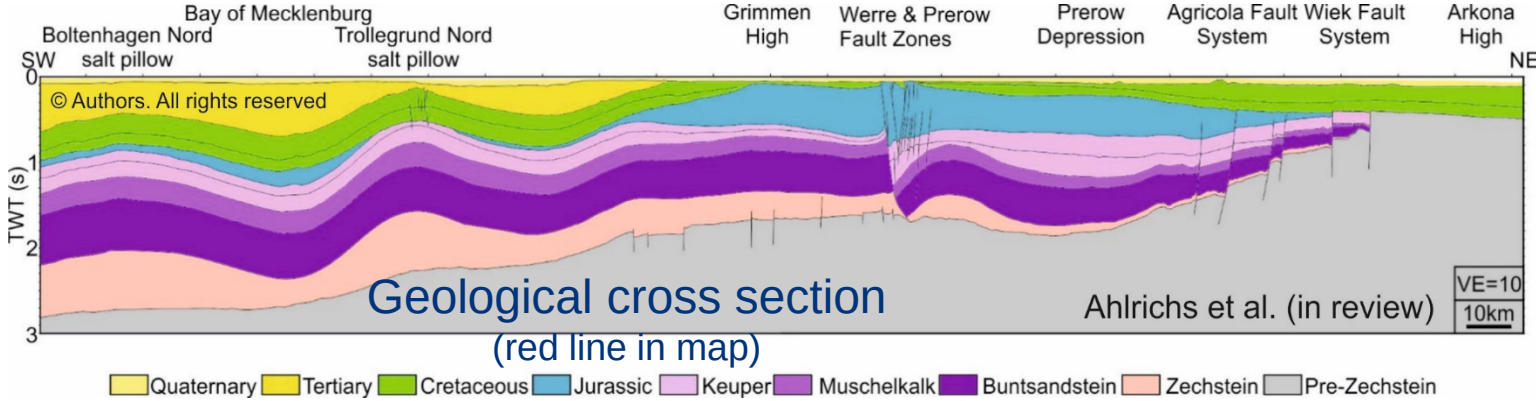
BGR Bundesanstalt für Geowissenschaften und Rohstoffe

Study area: The northeast North German Basin margin

Structual map of study area

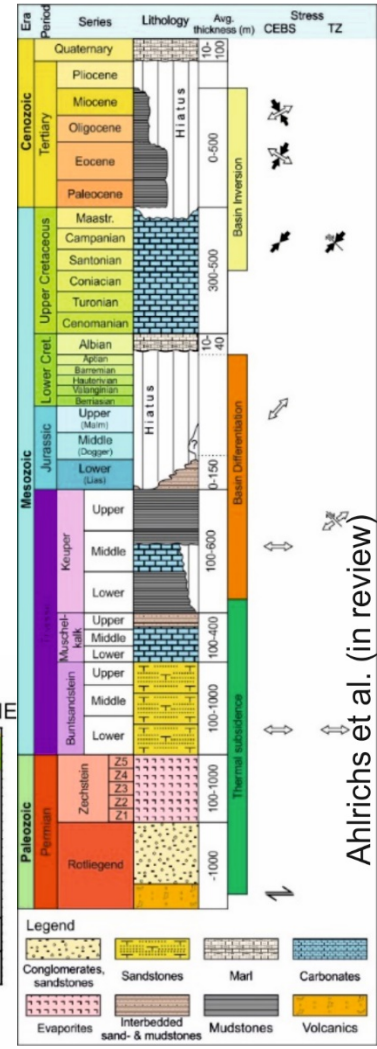




Geological cross section
(red line in map)

Quaternary | Tertiary | Cretaceous | Jurassic | Keuper | Muschelkalk | Buntsandstein | Zechstein | Pre-Zechstein

Tectonostratigraphic chart



Ahlrichs et al. (in review)

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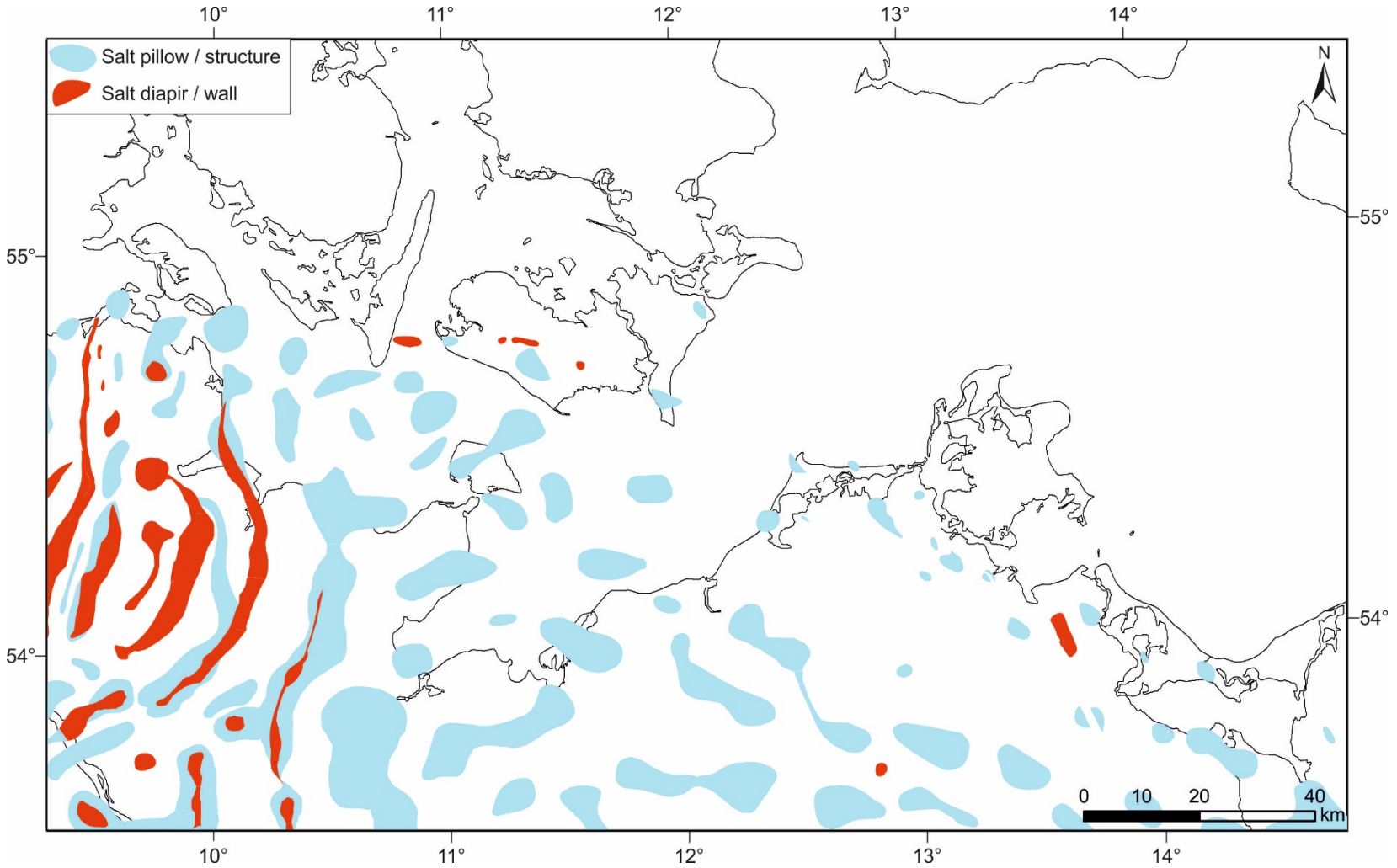
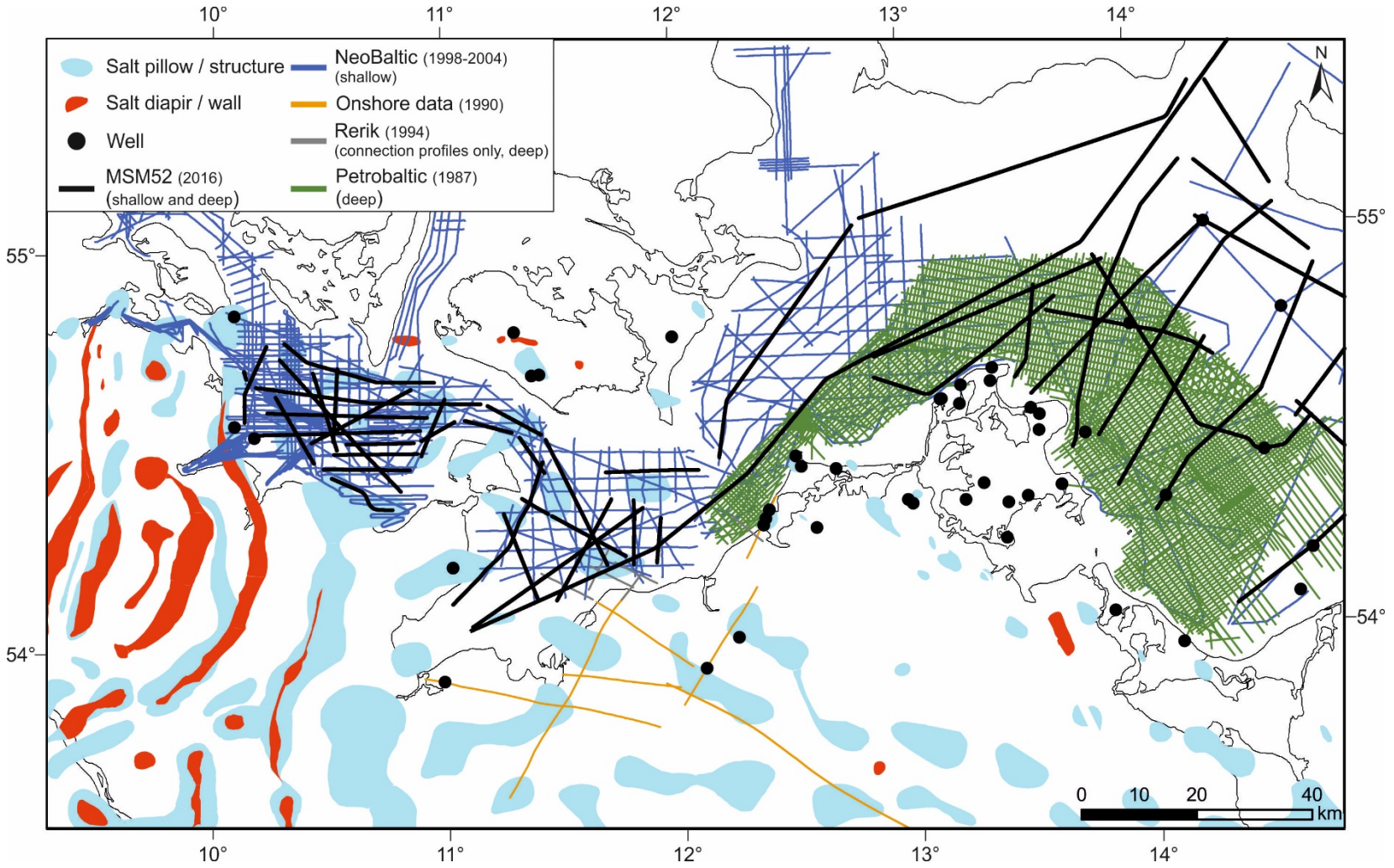
Salt structures at northeastern NGB margin



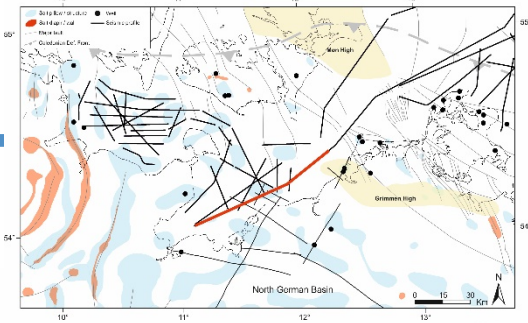
Salt structures after Pharao et al. (2010)

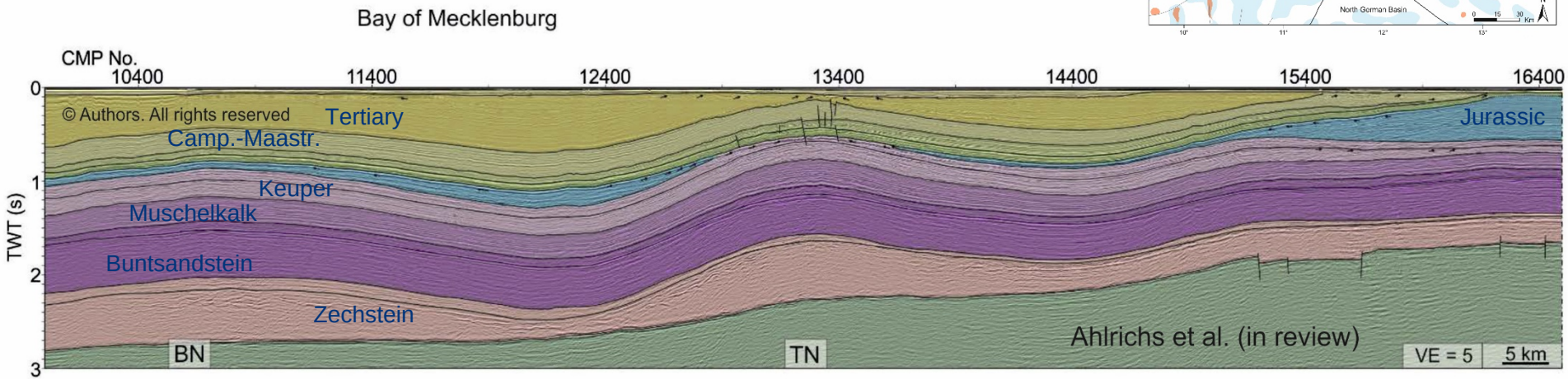
Database – seismic data and wells



Salt structures after Pharao et al. (2010)

Timing of salt movement : Pre-Cenozoic





Phases of salt pillow growth in the Bay of Mecklenburg:

- Prekinematic Buntsandstein and Muschelkalk
- Initiation of growth indicated by thickness variations in Late Triassic (Keuper) and Jurassic
- Quiescence during Late Cretaceous
- Remobilization indicated by thickness variations and crestal faulting in Latest Cretaceous /Tertiary

Timing of salt movement : Cenozoic

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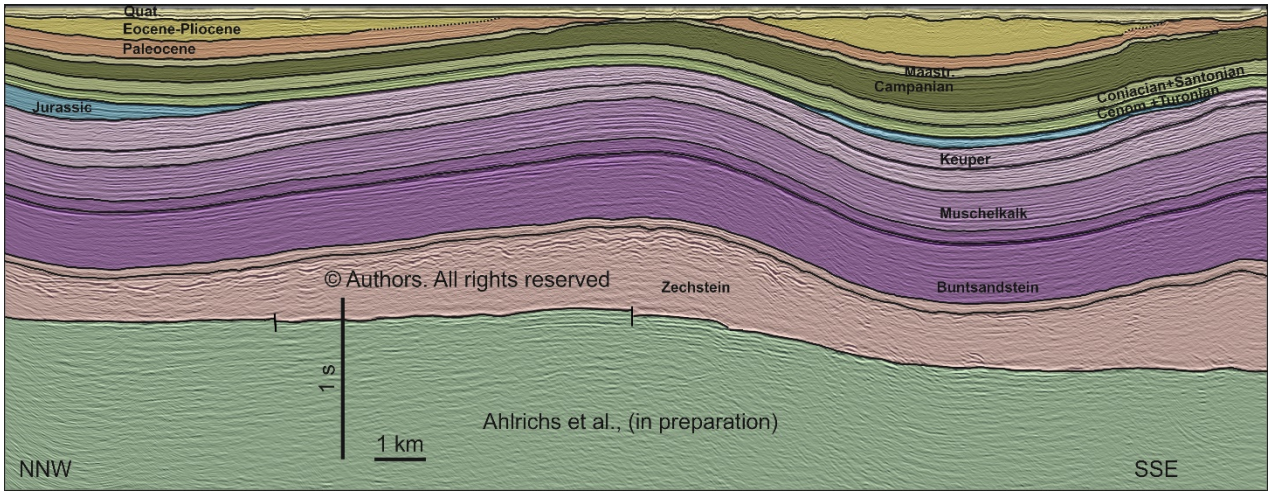
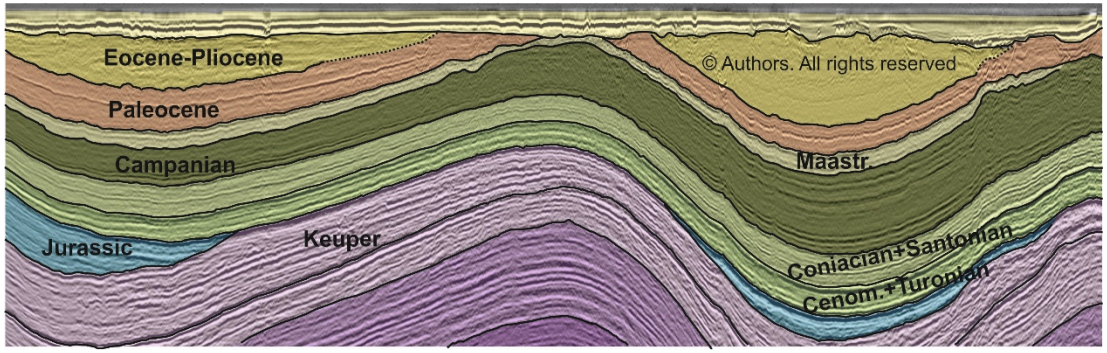
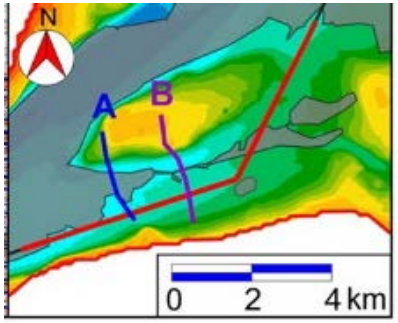
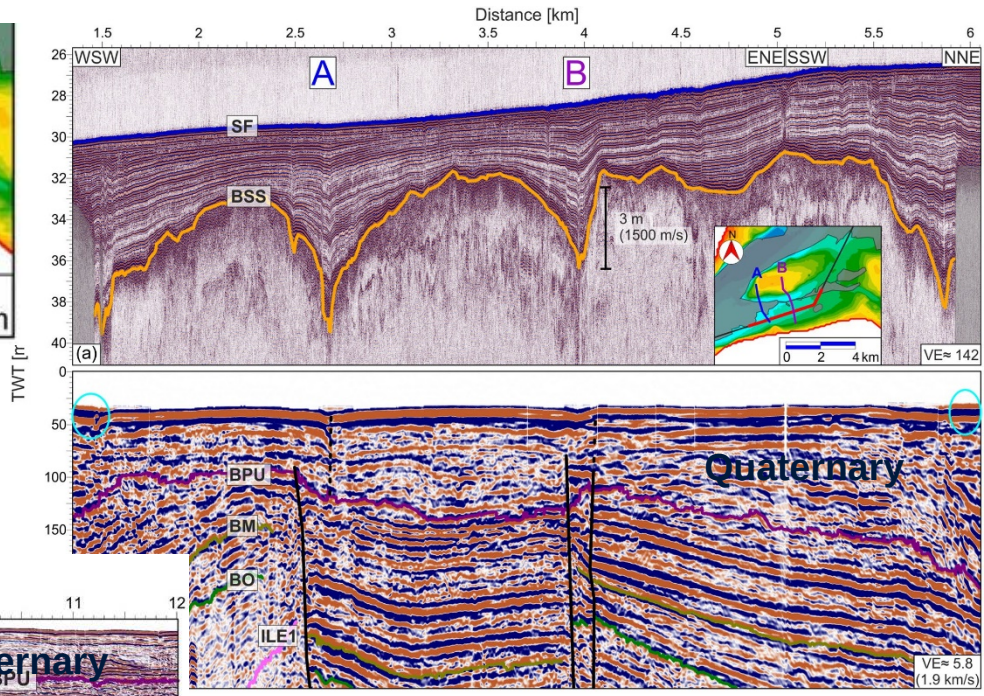


- Quiescence in salt movement indicated by uniform thickness of Paleocene
- Remobilization indicated by thickness variations in Eocene-Pliocene



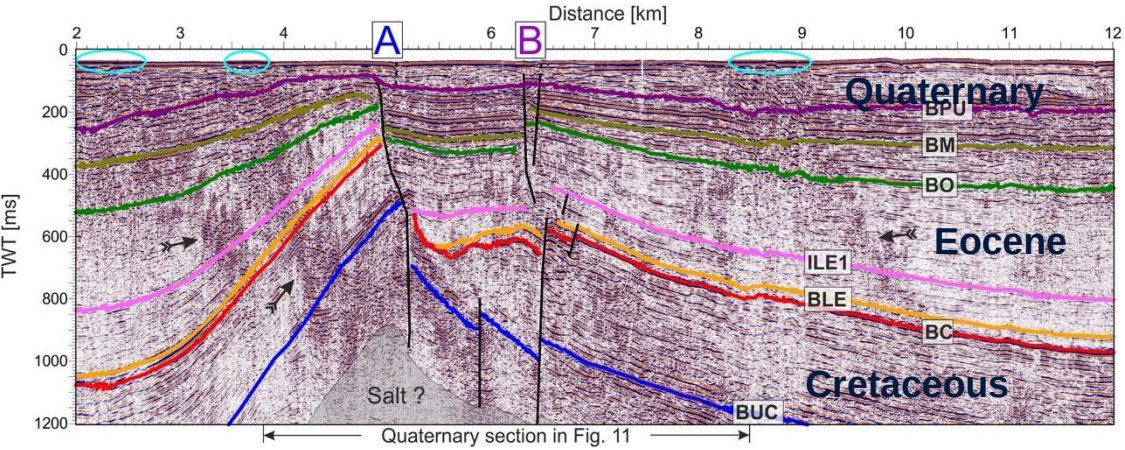
Quaternary salt movement?





Huster et al., 2020

Crestal faults (A and B) above salt wall visible in shallow glacial sediments.



Huster et al., 2020

Ongoing movement (?) affected by glacial isostatic adjustments?

Summary

- At least 3 phases of salt movement in the Baltic Sea sector of the North German Basin margin
  - Late Triassic initialization
  - Late Cretaceous remobilization
  - Eocene remobilization
  - Quaternary salt movement affected by glacial isostasy?
- Salt movement coeval with regional tectonic activity

We are looking forward to your questions and comments.

Contact us

during the **chat Thursday, 07. May 2020 - 08:30 – 10:15**

or via **niklas.ahlrichs@bgr.de**

References

Ahlrichs, N., Hübscher, C., Noack, V., Schnabel, M., Damm, V., & Krawczyk, Ch. (in review). Structural evolution at the northeastern North German Basin margin: From Late Triassic initialization to Late Cretaceous remobilization. *Tectonics*. In review.

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Pharaoh, T., Dusar, M., Geluk, M., Kockel, F., Krawczyk, C., Krzywiec, P., & et al. (2010). Tectonic evolution. In H. Doornenbal, A. Stevenson (Eds.), *Petroleum Geological Atlas of the Southern Permian Basin Area*, (pp. 25–57). Houten, Netherlands: European Association of Geoscientists & Engineers.