

Subsurface basement topography in the Cenozoic Andean foreland basin of northern Argentina: manifestations of long-wavelength deformation vs. inherited structures related to earlier orogeny and extensional processes

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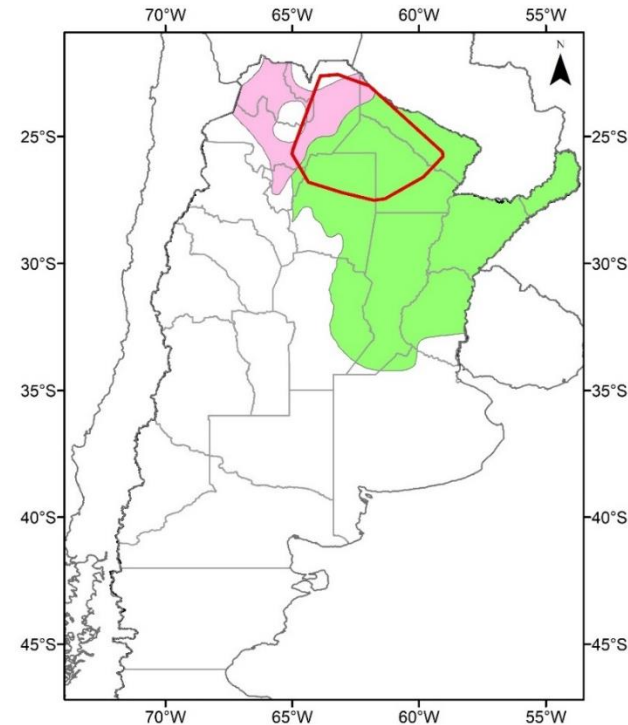
1-CICTERRA-CONICET Universidad Nacional de Córdoba, Argentina; 2- IGEBA-CONICET, Universidad de Buenos Aires, Argentina; 3- RWTH, Aachen, Deutschland, 4- GFZ German Research Center for Geosciences, Deutschland; 5- Universität Potsdam, Deutschland.



Location of the study area

Study area is located east of the Andean belt and it is part of the present day Andean foreland basin

Information: 30 wells and 120 2D seismic lines

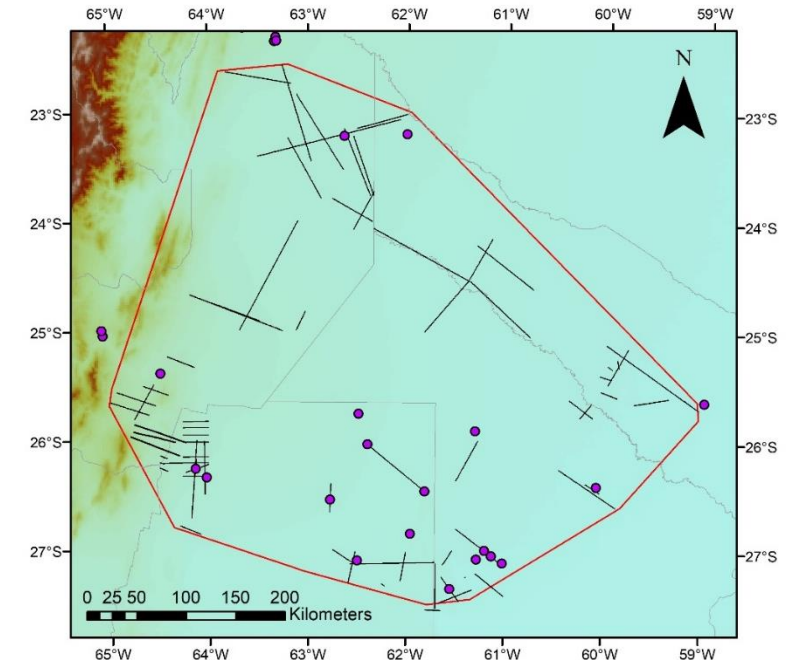


References

- Study area
- International borders
- Provinces borders

Sedimentary basins

- Chacoparanaense basin
- Salta rift basin



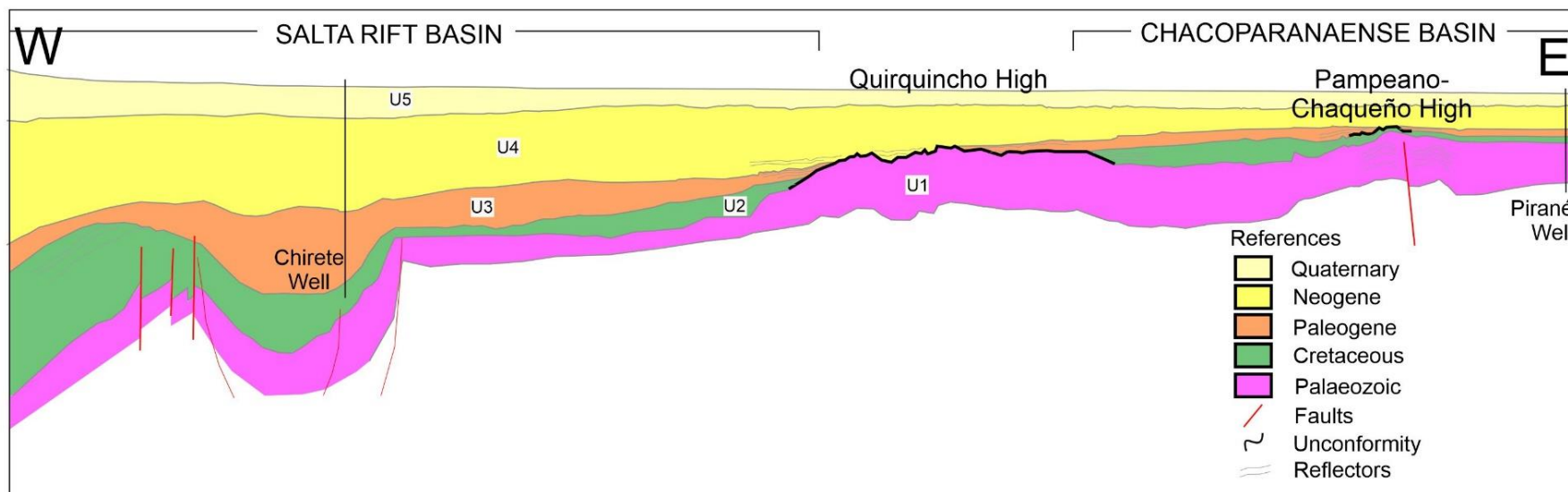
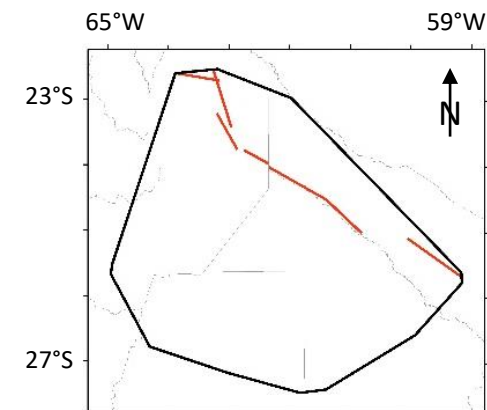
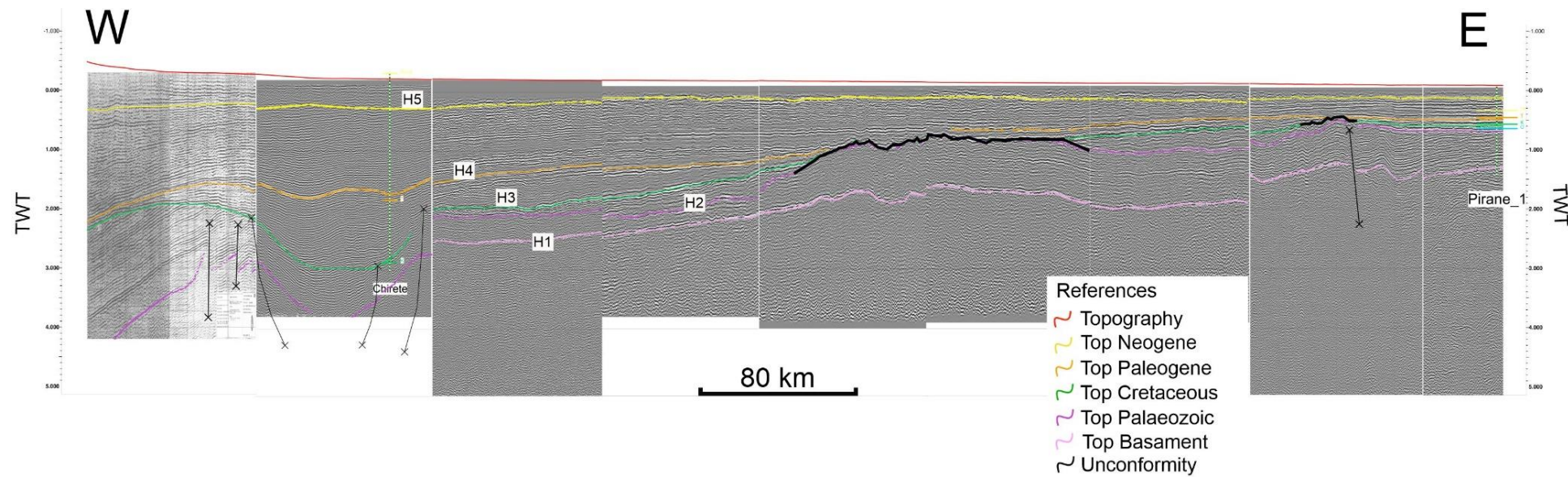
References

- Well
- 2D Seismic line
- Study area
- Provinces borders

Elevation (m)

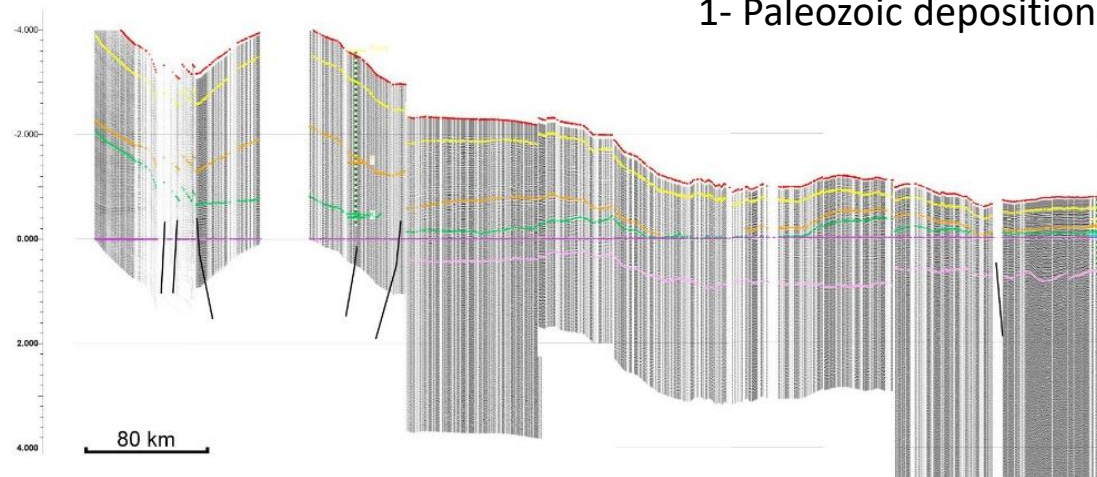


Seismic transect

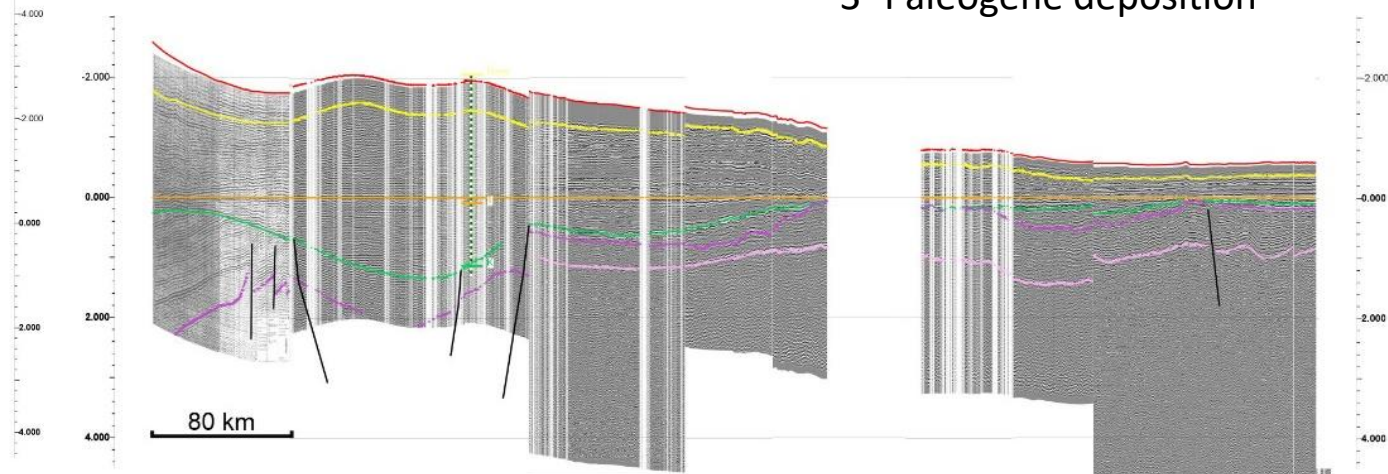


Seismic transect - Flattening

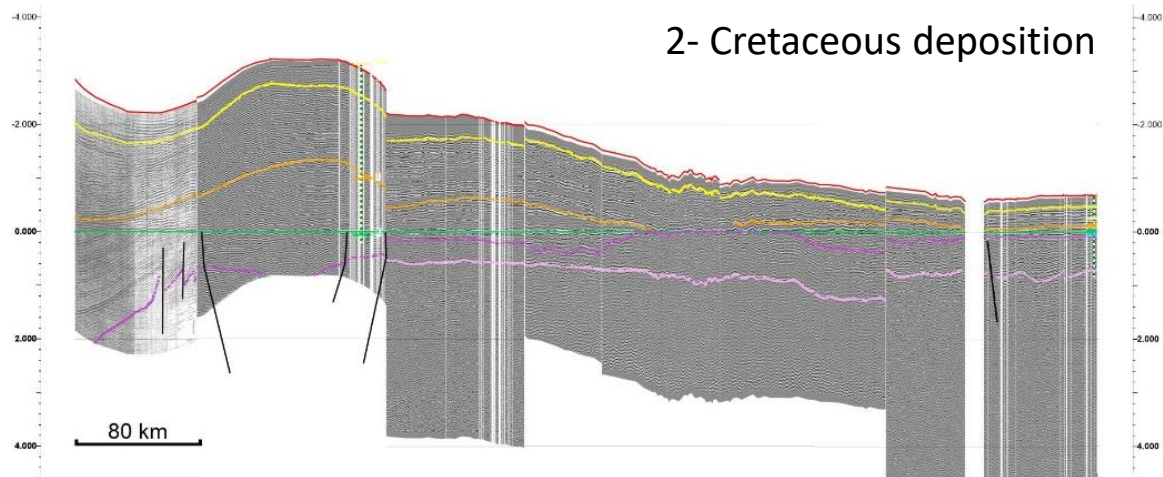
1- Paleozoic deposition



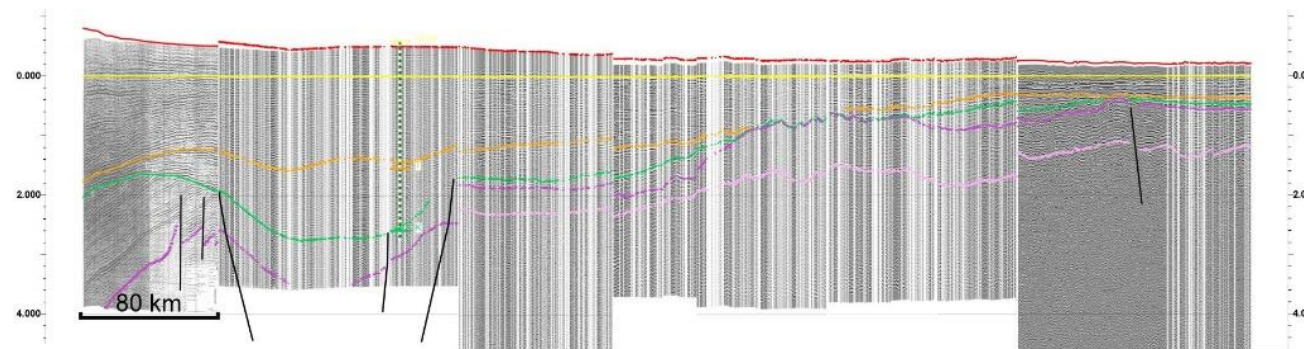
3- Paleogene deposition



2- Cretaceous deposition

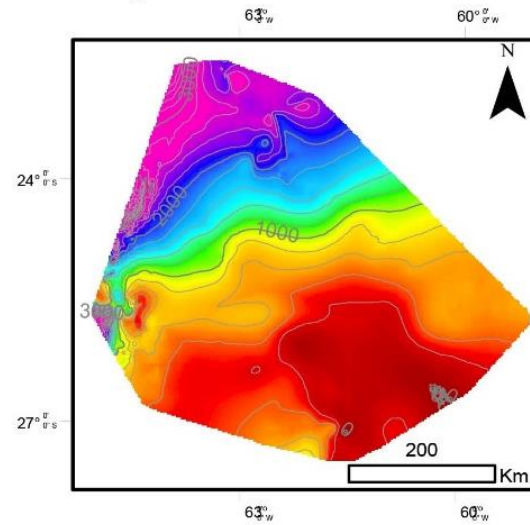


4- Neogene deposition

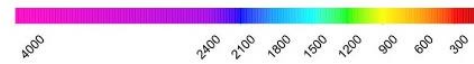


Isopach maps

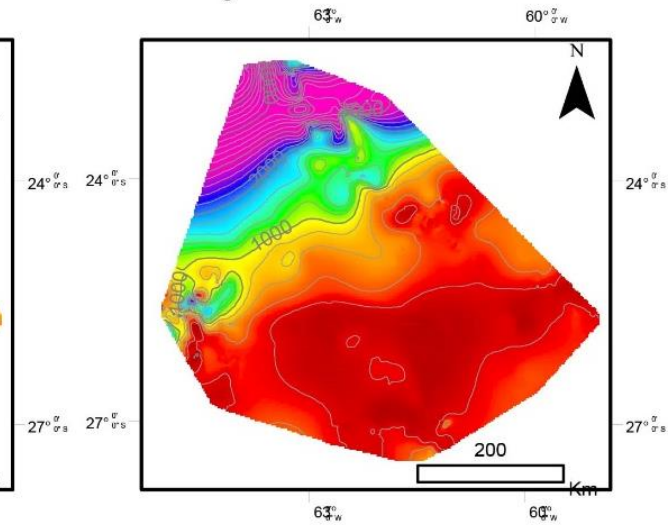
Neogene



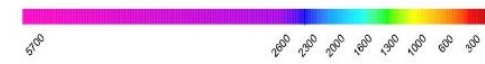
Thickness



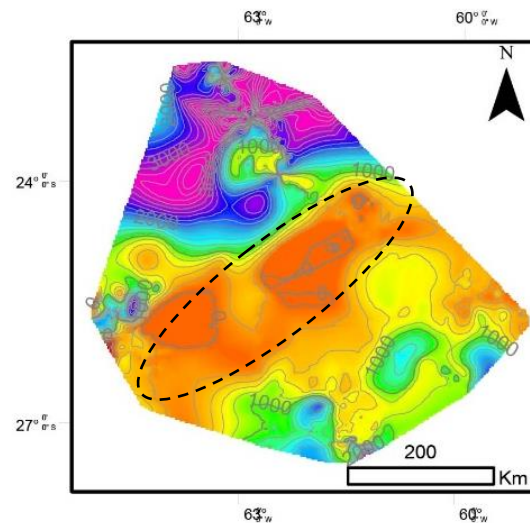
Paleogene



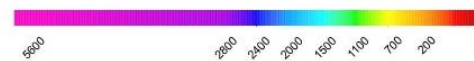
Thickness



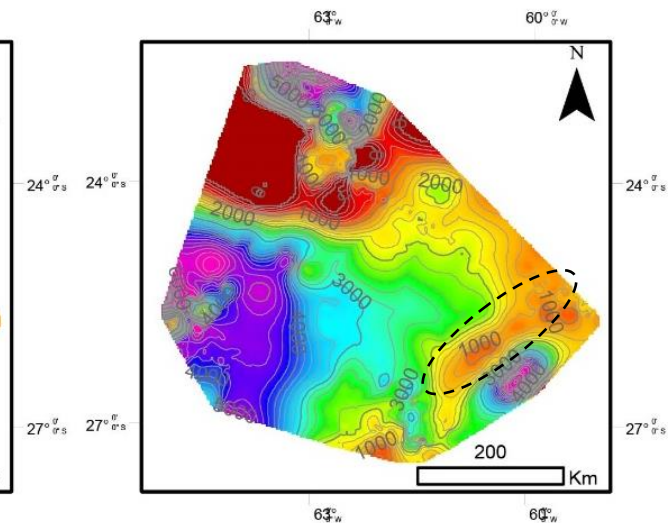
Cretaceous



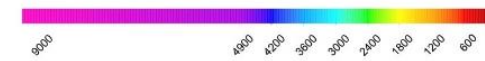
Thickness



Paleozoic

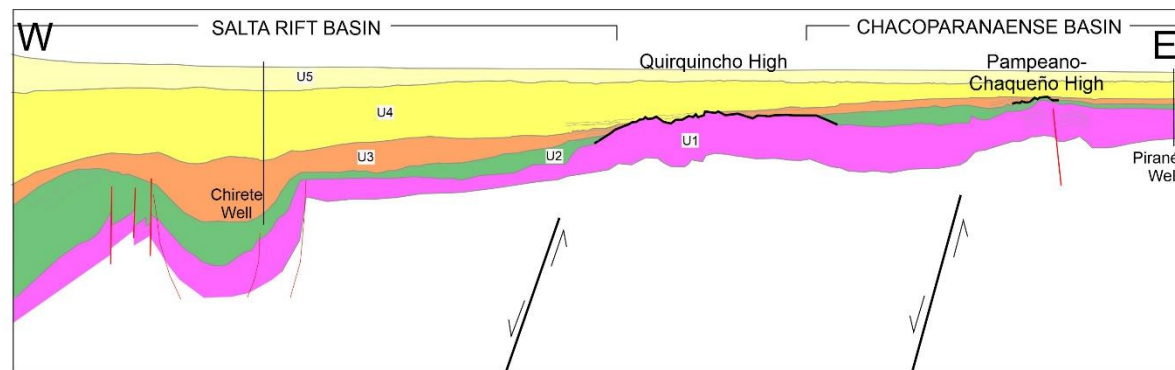


Thickness

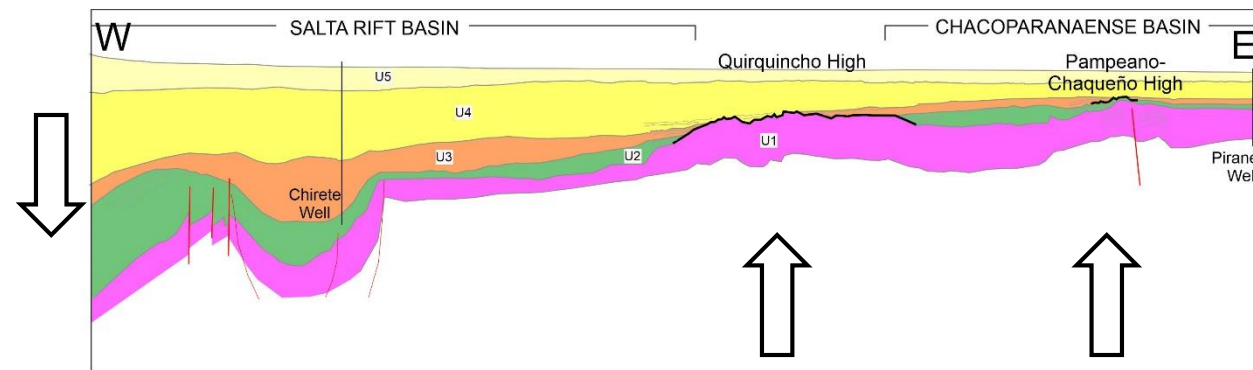


Discussion

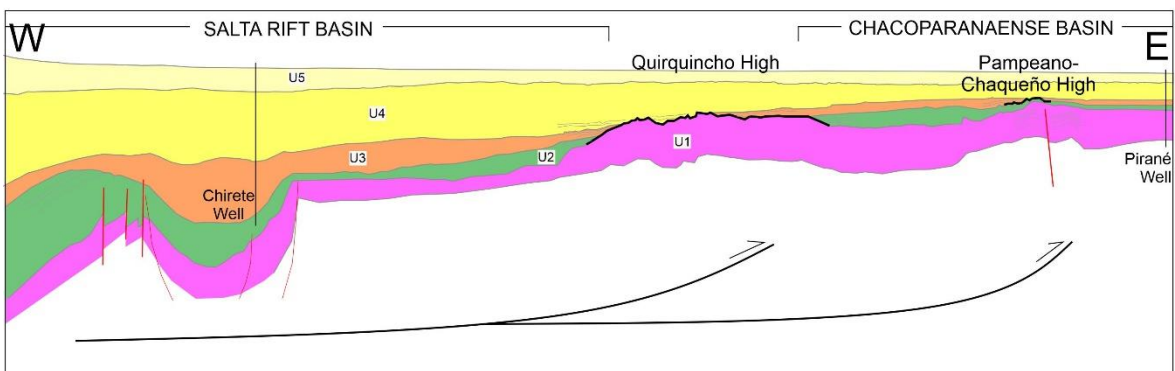
Model 1: Rift shoulders



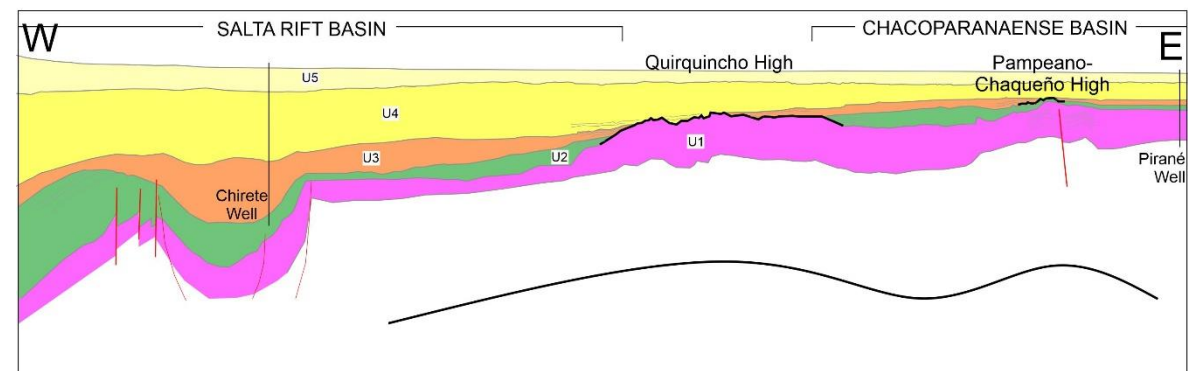
Model 3: Andean forebulge



Model 2: Deep detachments

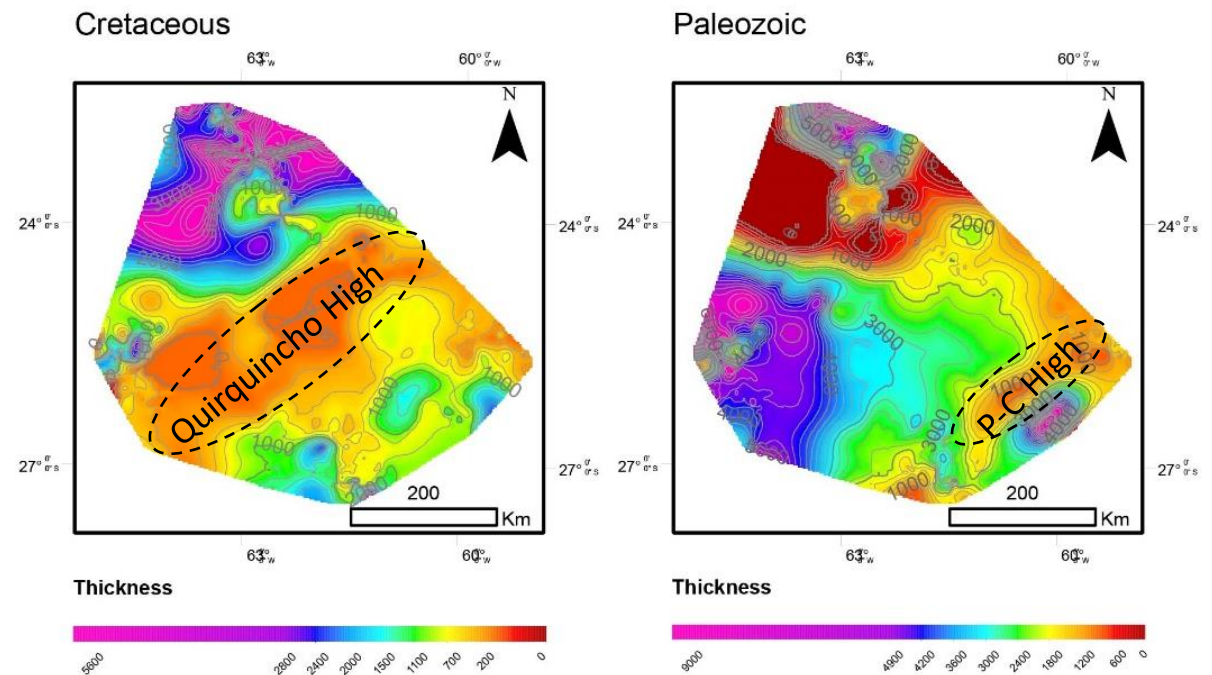


Model 4: Inherited structures



Conclusions

- Inherited structures reactivated
- Mixed mechanisms
- Importance of timing
- Potential of traps!!



Thank you!!!

Get in touch!

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