

DEEP SEISMIC ANALYSIS SOUTH OF CERRO SALINAS: WESTERN SIERRAS PAMPEANAS-PRECORDILLERA TERRANE BOUNDARY(ARGENTINA)

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New deep seismic-reflection data obtained by reprocessing of a second industrial line collected by Yacimientos Petrolíferos Fiscales (YPF) between the Precordillera and Sierras Pampeanas geological provinces of Western Central Argentina, confirmed and complemented early ideas about the deep geometry between these two different units. The existence of dipping acoustic reflectors, associated with a synthetic thrust and folded belt corresponding to a sedimentary accreted prism along the western proterozoic margin of the Sierras Pampeanas, was corroborated.

A major detachment zone (brittle-ductile interface) located at 14 km-depth was confirmed by several indications, such as:

- (1) A new seismic section constructed from the reprocessing of four old field works.
- (2) Stacking velocity analysis.
- (3) The rms seismic amplitude decay of the crust.

The seismic information along Latitude 32°15'S allowed the evaluation of an approximate 1.6 km-uplift of the western Tertiary deposits relative to the eastern part. This estimate complements the 1.0 km-uplift calculated by the authors in an early research.

A very careful application of the seismic-migration algorithm allowed the acoustic-image reconstruction of underthrusts associated with the Cerro Salinas uplift, the basement of which outcrops a couple of kilometers north of the new seismic line.

It is concluded based on the reprocessing of this second seismic line that the nature of the contact between the Sierras Pampeanas and Precordillera Terranes is a major crustal boundary associated with an Early Paleozoic-Late Precambrian suture.