The sequences analysed correspond to the Poti, Piauí and Pedra Fogo formations (respectively, Mississipian, Pennsylvanian and Upper Permian ages).

The cubic surface showed the best fit for the Poti Formation. The maximum sediment thickness is located in the central part of the basin, near the border between the Maranhão and Piauí states. The thickness decreases progressively towards three main high areas, probably representing basin margins. They are the Ferrer Arch towards the north, and the eastern and southwestern basement areas. A local structural high is found to the south, corresponding to wells RB-1-MA and CA-1-MA in the southern Maranhão State. The analysis of residuals suggests a basin oppening towards the south.

Pattern of sedimentation changed markedly during deposition of the Piauí Formation, as disclosed by the trend surface maps. 3 th degree surface showed the best fit. A north-south trending intrabasinal positive element is well marked by the definition of an extensive area of low thickness, almost entirely surrounded by areas of greater thicknesses. The basin margin seems to be well defined to the west, at the Maranhão, Goiás and Pará states boundaries.

The scarce data for the Pedra de Fogo Formation limited the interpretation to the 2 nd degree surface, which showed the best fit.

The basin pattern is again different from the two lower units. The area of maximum thickness is now located at the margin of the basin. Two positive areas may be recognized to the north an south representing the basin margins.

TREND SURFACE ANALYSIS OF THICKNESS DATA OF THE CHACO-MESOPOTAMIAN BASIN, ARGENTINA

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Thickness and sand/shale ratio data of the Late Paleozoic Sachayoj, Charata and Chacabuco formations of the Chaco-Mesopotamian Basin of northeastern Argentina were analysed by means of trend-surface techniques.

Due to small number of control points available, the interpretation is restricted to surfaces up to 3 rd degree.

For the Sachayoj Formation the most adequate fit was obtained for the 2 nd degree surface, as indicated by the percentage of total sum of squares and correlation coeficient.

Both thickness and sand/shale ratio surfaces indicate that the sediments were deposited in an elongated basin, with a general trend in the northwest-southeastern direction, limited towards northwest by the Pampean and Asunción arches. Towards the southeastern, the basin margin is represented by the Rio Grande-Uruguayan shield and towards west and south, by the Pampean arch and Martin Garcia uplift, respectively.

The same basin pattern was obtained for the Charata Formation, both for the thickness and sand/shale ratio surfaces. They indicate a more subsiding area in the northwest part of the basin bounded towards the southwest and northeast by two positive elements (Pampean Arch and Uruguayan-Rio Grande shield).

The best surfaces obtained for the Chacabuco Formation thickness and sand/shale ratio data was of 1 st degree. The maps show a general increase of thickness towards the northeastern, a tendency also accompanied by the sand/shale ratio data. A possible way to explain this situation would be to interpret the basin as being tilted towards the Asunción Arch and filled up by a clastic wedge sequence.

STRATIGRAPHIC ANALYSIS OF THE RIO BONITO FORMATION THROUGH TREND SURFACE TECHNIQUE

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Published subsurface thickness data and other stratigraphic parameters of the Rio Bonito Formation (Guatá Subgroup), an important clastic constituent of the Late Paleozoic post-glacial sequence of southeastern Paraná Basin, were examined by means of the trend surface technique.

The Rio Bonito Formation is notable for its numerous non-commercial subsurface occurrences of oil and gas and a few oils seeps. In southern Catarina and Paraná, the formation contains minable coal beds. Application of the trend-surface technique was performed as a tool for understanding the tecto-sedimentary history of the formation.

A set of maps for surfaces up to 3 rd degree was obtained using 20 control points, for data on total thickness, total sandstone thickness, sand/shale ratio, number of sandstone bodies, ratio of thickness over number of sandstone bodies, thickness of sandstone in the 50 m of the top of the formation, etc.

Best fit was obtained for the 3 rd degree surfaces for all types of parameters analysed, as indicate by the percentage of total sum of squares and correlation coeficients.

Interpretation of the maps seem to indicate the presence of sizeable bodies of clastic (sandstone) sediments occupying the central-southern area of Santa Catarina and southern Paraná states. The clastic sediments had probably an eastern provenance from the basement area to the east. The geological data available for the area allow to intepretet the clastic wedges as representing deltaic deposits.

Comparison of the trend surface maps with other conventional stratigraphic maps obtained from the literature for the same area revealed a reasonable consistence in the picture obtained.