

CENOZOIC DEFORMATION HISTORY OF THE CENTRAL ANDEAN PUNA PLATEAU, NW ARGENTINA.

Adelmann, Dirk and Görler, Konrad

The present endorheic basins of the Central Andean Puna plateau (NW Argentina) exhibit the timing and character of deformation during the last 40 Ma. Basin-forming processes were related to contractional tectonism due to the build-up of the Central Andean mountain range. The sedimentary record documents the incorporation of the Early Tertiary Andean foreland into the magmatic arc whereby the relatively uniform Puna basin, a retroarc foreland basin, was segmented into numerous isolated intra-arc basins. Horizontal shortening started during the Late (or Middle) Eocene Incaic deformation. It affected the eastern and western border of the Puna basin. In the west, deformation and uplift is well known from the Chilean Precordillera. An eastern highland (Proto-Eastern Cordillera) is now documented by facies distribution patterns, paleocurrent measurements and the composition of synorogenic sediments of the Puna. During the Late Oligocene renewed tectonic shortening led to uplift of basement blocks and initial segmentation of the Puna. Late Oligocene shortening also can be observed in the Northern Altiplano, the Bolivian and Argentine Eastern Cordillera and the Chilean Precordillera. We presume that the widespread occurrence of a Late Oligocene deformation is directly related to a concurrent increase of the arc-normal convergence. Further contractional movements occurred on several pulses (20-17 Ma, 12-9 Ma, 5-2 Ma). They produced further reverse fault systems segmenting the Puna basin into numerous endorheic basins.