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Program and Abstracts

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assic shoulders. These structures conditioned the migration and accumulation of the hydrocarbon in some of the biggest gas and oil fields of the basin. The effect of differential subsidence is continuous over time, and controls even current basin troughs. Its consequences, are more evident and visible in areas of low compressive deformation, however, there are also recognized in the Jurassic (Huincul) and Cretaceous-Tertiary (Andina) fold and thrust belts. The effect that this mechanism could produce a distortion in the present stress field of the basin that is currently being studied. The understanding of this process is very important for planning developing of non-conventional fields in Vaca Muerta Formation.

Tracing the volcanic and tectonic effects of the Miocene Andean stage along the Patagonian retroarc: an example of the Río Negro system, Argentina

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The Río Negro River system constitutes a drainage network located at the North Patagonian Region (39°S) that connected the Andes with the Atlantic Ocean through more than 600 km long. This corridor is one of the systems that control the transference of materials to submarine shelf, up to sink position, in the Argentina basin. During the Neogene this system was configured in a scenario of profuse arc-explosive volcanism, contractional tilt-block tectonics, the development of the orogenic rain shadow, as well as relative sea level changes. Several fault-bounded exoreic–closed-basins along the retroarc present infill that record endogenous and superficial processes occurred during the birth of the Andean chain, at this latitude, as we observe it today. Even though large-scale stratigraphic scheme and holistic geological models were performed to go forward in the understanding of the system, until now are absent high resolution tectonic-volcano-climatic-eustatic models that allow to understand the sediment supply/accommodation space relationship and the reciprocal stratigraphical effects along the whole system, in which the propagation of the environmental signals be consider. Based on a multidisciplinary approach, which includes structural, stratigraphic, geomorphological and geochronological dataset together with previous surface and subsurface regional surveys, the analysis retroarc basin along Río Negro system is carrying out. The preliminary results indicate that many contractional phases related to out of sequence, thick-skinned tectonics, progressed under explosive volcanism which affected in different way the system, according to the frequency order measured and location along the system. At the foot of the Andes, preliminary

geochronological and magnetostratigraphic analysis reveals that the main infill of the basins has a maximum depositional time process of 128 Ky related to PDC as well as resedimented volcaniclastic materials, whereas along the system their show changes in the infill patterns and in the transference systems occurred during middle-upper Miocene. These changes are recorded together with huge climate change related to the uplift and exhumation of the Andes, connection/disconnection of the system with shelf and sea level variations. Future works will aim to the understanding how the subtle interplaying of tectonic-volcano-climatic-eustatic forcing controls determine the reciprocal stratigraphy and its propagational effects from the Andes to the Atlantic sea.

Stratigraphic architecture in early stages of intermontane basin: the Miocene Calchaquí foreland, NW Argentina

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Foreland basins are sensitive recorders of spatiotemporal variations of tectonic and climatic forcing concerning to processes associated with an approaching orogenic front. The analysis of depositional systems, and paleoflows coupled with stratigraphic arrangement of the foreland deposits allows a fairly accurate assessment of extra and intra basin deformational processes. The Calchaquí region, located at ~24-26°S in the Eastern Cordillera of NW Argentina, was once part of the contiguous Andean foreland basin that evolved structurally into a compartmentalized broken foreland during the Mio-Pliocene. This region is ideal for the study of the variations in tectonic, climatic and sedimentary processes, due to very well exposed of basin strata that contain a rich record of flora and vertebrate fossils, and radiometrically datable volcanic ashes. We combined traditional sedimentological methods, U-Pb zircon and K-Ar geochronology, clay mineralogy, and geochemical weathering/climate indices with structural field data and fault modeling to document the stratigraphic response of the former foreland deposits to basin fragmentation. The 14-9 Ma Las Flechas Member (upper Angastaco Formation) and the 9-5 Ma Palo Pintado Formation comprise three depositional systems and transitioned from gravelly braided, sandy braided to anastomosing-river systems. The slow transition from sandy to gravelly braided and the rapid transition from gravelly to anastomosing reveal a prograding-retrograding pattern of the sedimentary sequences highlighting an expansion surface. Thus, the regional sedimentary succession recording the transition between an unrestricted to a compartmentalized