

## The Eastern Tobífera Thrust: an important accommodation structure for the closure of the Rocas Verdes Basin, Patagonian Andes (52°-54° S)

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The *Western Domain* of the Magallanes Fold-and-Thrust Belt (MFTB) in Chilean Patagonia between 52°-54°S is part of a key region connecting the N-S Patagonian sector and the E-W oriented Fuegian sector of the southernmost Andes. This basement hinterland domain of the MFTB comprises tectonic imbrications of pre-Jurassic basement, ophiolites, and volcano-sedimentary successions that originated in the Late Jurassic-Early Cretaceous Rocas Verdes Basin (RVB). From a field study we unraveled NNW-SSE oriented structures conforming their tectonic contacts, and recognized mylonitic zones at the hangingwall of the defined *Eastern Tobífera Thrust* being the structural connector between the thick and the thin-skinned sectors of the MFTB, and to the west of this. The shear zone is defined by (proto)mylonitic metatuffs and metapelites with a characteristic NE-verging  $S_1^*$  foliation. From major-element compositions of whole-rock and metamorphic minerals in these mylonites, pseudosections were constructed and pressure-temperature (P-T) conditions between 3.5-5.5 kbar and ca. 230°-390°C derived. These conditions are consistent with tectonic burial to intermediate crustal levels (~15-20 km depth) and with those of the mylonites from the *Canal de las Montañas Shear Zone* (51°-52°S). This shear zone constitutes a ~400 km long lithospheric structure that accommodated the underthrusting of RVB successions in a relatively cold accretionary wedge. Additionally, the metamorphic conditions of the rocks from the Patagonian sector of the MFTB were cooler than the P-T conditions recorded by rocks from the Fuegian sector of the RVB (south of the *Estrecho de Magallanes*), revealing different magnitudes of hinterland exhumation along the strike of the belt. Different geochronological data, including a new <sup>40</sup>Ar/<sup>39</sup>Ar white mica age of ca. 70 Ma determined on mylonites of the study area, are consistent with a post-Maastrichtian uplift age of the hinterland of the MFTB in the Patagonian and Fuegian sectors.

**Mots-Clés :** Andes, Orogen, mylonite, shear zone, petrology, geochronology