

## CAMBRIAN MAGMATISM AND CAMBRO - ORDOVICIAN TECTONO METAMORPHIC EVENT IN NAHUEL NIYEU FORMATION, NORTH-PATAGONIAN MASSIF, ARGENTINA

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Nahuel Niyeu Formation metasediments are interbedded with metamafic sills between Valcheta and Aguada Cecilio towns, Rio Negro Province, Argentina. The sills display clear intrusive contacts, concordant with relict, sedimentary  $S_0$  bedding. Their composition is dominantly gabbroic, with minor granodioritic and even granitic differentiates. A main tectono metamorphic event (D1-D2-M1) at greenschist facies affects both the sedimentary and interbedded igneous protoliths. Muscovite leucogranites equivalent to the Valcheta Pluton of 470 Ma (Ar-Ar; Gozálvez 2009) are emplaced in the already deformed sills and metasediments. Zircon crystals were collected from a granitic differentiate of a sill and analyzed by SHRIMP U-Pb method at the Centro de Pesquisas Geocronológicas, Geosciences Institute, University of São Paulo. Cathodoluminescence (CL), Secondary Electron (SE), and binocular lens images were used for choosing the sites for analysis on the basis of internal structure and fracturing degree of the grains. The crystals are prismatic, amber colour or colourless and transparent, they present low luminescence and show oscillatory and sector zoning, typical of magmatic zircon. The U-Pb SHRIMP analysis yielded a Cambrian concordia age of  $513.6 \pm 3.3$  Ma (MSWD = 0.84). This result is interpreted as the age of magmatic crystallization of the sill. From the above, a Cambrian magmatism ( $513.6 \pm 3.3$  Ma) of mainly basic composition is confirmed. This magmatism is coeval with the deposition of the sedimentary protoliths of the Nahuel Niyeu Formation, since their maximum deposition age is around 515-507 Ma (Pankhurst et al. 2006; Rapalini et al. 2013). Furthermore, the first and main tectono metamorphic event (D1-D2-M1) may be constrained between 513.6 and 470 Ma, on the basis of the equivalence of the postorogenic leucogranites with the 470 Ma, Valcheta Granite.