

## **Metallogenic Episodes of the Central Andes**

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Recent studies have demonstrated that evolution of magmatic activity, under certain pressure conditions, produced the right circumstances to form large ore deposits. Most of the large world-class deposits of Chile and Argentina may be explained by the right combination of a differentiated magma and proper crustal thickening. If it is accepted that timing of thickening varies from north to south along the Andean Cordillera, it can be explained why the different large ore forming processes become younger to the south. The main mineralization in the Maricunga belt is between 13 and 11 Ma; in El Indio, 12 to 10 Ma; the mineralization in the Pelambres District about 10 Ma; in Pachón, about 9 Ma; Los Bronces-Río Blanco from 7 to 4.9 Ma and in the El Teniente approximately 4.9 Ma. A similar trend is observed in a west to east transect along the flat-slab segment. The shallowing of the Benioff zone, since the early Miocene produced a migration of the magmatism toward the foreland, at the same time that the orogenic front and the subsequent thickening of the crust, migrated in the same direction. In this scenario, the timing of mineralization is decreasing to the east: epithermal deposits at El Indio are between 12 and 10 Ma; gold skarn at Gualilán about 9 Ma; and the Famatina Mo-Au rhyrites, between 4 and 3 Ma. Based on the previous concept, several distinct metallogenic processes have been identified, as responsible of the world-large deposits found in this sector of the Central Andes.