# MARINE FRONTIERS ABSTRACTS

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## Miocene to Holocene Mineralization Associated with Manila Trench Subduction in Central Cordillera, Luzon, Philippines

The Central Cordillera of Luzon is part of the plutonic-volcanic arc associated with the eastward subduction of the South China Sea basin along the Manila Trench. Successive episodes of intrusion and volcanism occurred from the early Miocene to the Holocene. Hydrothermal activity related to these plutonic-volcanic complexes is responsible for various mineralizations, among which five types can be distinguished: (1) porphyry copper with Cu-Au-(Ag)-(Mo); (2) replacement deposit with Zn-Cu-Au-(Ag)-(Pb)-(Cd); (3) vein-type copper-arsenic sulfide deposit with Cu-As-Au-(Ag)-(Te); (4) disseminated mineralization with Au-Ag-(Cu)-(Te); and (5) vein-type deposit with Au-Ag-(Cu)-(Te).

Types 1 and 2 correspond to the oldest (7.3-3.6 Ma) and the deepest mineralization into the plutonic-volcanic complexes. Types 4 and 5 correspond to

the youngest (< 1 Ma) and the most surficial complexes. Age versus depth of emplacement distribution of the mineralization is due to the intense Pliocene-Quaternary uplift and correlative erosion of the Central Cordillera. This uplift is associated with the strike-slip motion of the Philippine fault and is contemporaneous with the collision that occurred during the same period, between the southern tip of the arc and the North Palawan block.