



Dynamics of mountain building: case study Central Andes (Peru)

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We present the structural style and its extrapolation to depth in a transect through the Central Andes of Peru from the Pacific Ocean to the Amazon foreland.

The Western Cordillera consists of a E-vergent fold-and-thrust belt in the Jurassic to Cretaceous strata that is intruded by various granites and granodiorites of the Coastal Batholith. A folded volcanic arc sequence (Casma group) straddles the western margin of the Western Cordillera. Eocene to Oligocene volcanics of the Calipuy group were deposited within the cordillera after an erosional event and became subsequently slightly tilted and folded. Owing to a shallower dip of the subduction zone, volcanism ceased in Miocene times.

The Eastern Cordillera has a core made up of a Late Paleozoic orogen. To the east, E-vergent Neogene thrusting migrated towards the Amazon foreland and produced the fold-and-thrust belt of the Subandean Zone. Thrusts that penetrate deep into the crust are likely to be responsible for the high elevation of the present day Andes. To the west, steep reverse faults with strike slip component raise Neoproterozoic of the core of the Eastern Cordillera adjacent to unmetamorphosed Permian sediments.

Deformed Pleistocene gravels and faulted Holocene gravels witness to the ongoing deformation within and between the two cordilleras.