

0.1 The Sama Calientes thrust Fault system: Geomorphologic evidences of its recent activity

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The studied area is located near the hot springs of Calientes (Tacna region) at the very southern end of Peruvian forearc. The observed tectonic morphology marks the base of the hill front, near the town of Calientes, upstream from Tacna in the Caplina Valley. It cuts as well through the active flood plain of the Caplina River, forming a nice emergent thrust over kilometers, also associated to major flexures in the Huaylillas Formation (25-9Ma). At this location, one of the last surface ruptures can be observed within the youngest river terrace near the village of Calientes (Quaternary) and also within the Pedregal Plain. Active faults are likely to cut the surface of alluvial or fluvial terraces as well as other landform, but several aspects of terraces or pediment surfaces make them usefull to study active tectonics, or date the deformation for example. Alluvial terraces are mostly flat and due to the local aridity in Southern Peru, it also represents an approximate geomorphic time marker. As the fault cuts the last well developed Caplina river terrace, then faulting is known to postdate the age of that surface. Some new recent indices will be presented indicating the recent activity of this fault system and it's implications in term of risk with respect to Tacna city.