



## **A new hypothesis that contributes to the formation of cold sludge volcanoes and fluid outlets in tectonic seabed & terrestrial regions; with its helpful interpretation for time fracture sequence of fault segments.**

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During the co-seismic development of a fault in lithological environments, regions containing cavities may form momentarily or permanently. In the tectonic shift zones, these pressure gaps lead to the formation of irregular new intermediate sediment zones, as infiltrate in to the gap, if the pressure perturbations are large. The semi-fluid sediment material and sea water enter through opening fault sector's surrounding sediments at the far place from dispersing fault energy burst. But pore water infiltration is independent about place of vomited energy burst. In some cases hard material which detached from fault wall or top sediment material, provide isolation lids, as obstacling on 'cell type empty interlaying gaps' at tectonic line. They can collapse again or stay as gap form for a long time with suction force after seismic activities by effects of gravitation or pressure perturbations. For durable gaps, pore water is capable to infiltrate in to the gap with long lasting suction forces. In these regions, in contrast to gravitational folding or collapse structures, the partial sediment sequence may be drawn and folded into the area of the material with different or close lithological density value. Deformational variety of the displaced materials are related with physical properties of seismic event at opening sector such as friction, displacement parameters (velocity, time), dimensional parameters of gap, and water depth. The main objective of the paper is to figure out all interference mechanisms about these zones (created by pressure perturbations), which develop rapidly during earthquake fractures (or in some cases fractures generated by impulsive pressure changes such as those created by volcanoes). Fracture of fault segments forms a complex mechanical system associated with bedrock, upper sedimentary sequence, and aquatic environment, depending on the location where they occur, even the atmosphere. Therefore, the displacement may be bi-directional to the

lower slit or upward from the seabed during the opening or closing stages of the cavity, depending on the nature with variations of the atmosphere & water-sediment mixture. The strong (pulling or impulsive) pressure perturbation effect associated with permanent cavities caused by rapid breakage pulls the material that may form a sludge volcano or water outlet under deformation and brings the environment to near pressure equilibrium. This simple explanation can help to find real additional effective reason for the different formations of assumed collapse or folding structures created by gravitational movements in geology. The hypothesis after main objective at above mentioned in this article is based on the fact that the emergence of escapes as squeezed fluid form of water & sediment from compacted secondary irregularities in the previously broken fault segment will help to understand the next seismic mobility in other tectonic segments by identifying source depth cues through physical and chemical analysis. Geophysical instrumentation and applications are still need further developments of compact reflection line information, because the vertical thin anomalies mentioned in this paper are the most difficult structures for detection.