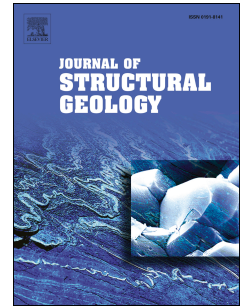


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Seismically induced soft-sediment deformation structures in an active seismogenic setting: The Plio-Pleistocene Karewa deposits, Kashmir Basin (NW Himalaya)

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1 **Seismically induced soft-sediment deformation structures in an active**
2 **seismogenic setting: The Plio-Pleistocene Karewa deposits, Kashmir**
3 **Basin (NW Himalaya)**

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8 **Abstract**

9 Recent uplift in the NW Himalaya has exposed more than 1000m of the Plio-Pleistocene
10 so-called Karewa deposits in Kashmir. These deposits mostly consist of horizontal-stratified
11 sand, silt, clay, conglomerates, and lignite beds. The sedimentary succession belongs to the
12 Kashmir basin that is located in a seismically active zone. The area was previously affected
13 by large earthquakes.

14 The observed soft-sediment deformation structures (SSDS) are predominantly developed
15 in the sand, silt and clay beds; and include load and water escape structures, intrusive
16 sedimentary bodies, convolute bedding, disturbed laminites, and slump structures.
17 Deformation mechanism and driving forces of the SSDS were seismic shock waves.
18 Sediment loading and storm events as driver for the SSDS are less likely and the proximity of
19 the SSDS to faults underlines the seismic origin of these structures. Syn-and post-
20 depositional faults and deformation bands developed in the Karewa deposits support the
21 interpretation of neotectonic activity and point to an earthquake of magnitude >5.5 that struck
22 the Kashmir basin in the Plio-Pleistocene.

23 **Keywords:** Soft-Sediment deformation; seismites; earthquake magnitude; Karewa deposits;
24 Kashmir Basin

25 **1. Introduction**

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