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**Soft sediment deformation associated with the East Patna Fault south of the Ganga River, Northern India: Influence of the Himalayan tectonics on the southern Ganga plain**

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**Abstract**

The geomorphic, tectonic and seismic aspects of the Ganga plain have been studied by several workers in the recent decades. However, the northern part of this tectonically active plain has been the prime focus in most of the studies. The region to the south of the Ganga River requires necessary attention, especially, regarding the seismic activities. The region lying immediately south of the Outer Himalayas (i.e. the Ganga plain) responds to the stress regime of the Himalayan Frontal Thrust Zone by movement along the existing basement faults (extending from the Indian Peninsula) and creating new surface faults within the sediment cover as well. As a result, several earthquakes have been recorded along these basement faults, such as the great earthquakes of 1934 and 1988 associated with the East Patna Fault. Large zones of ground failure and liquefaction in north Bihar (close to the Himalayan front), have been recorded associated with these earthquakes. The present study reports the soft sediment deformation structures from the south Bihar associated with the prehistoric earthquakes near the East Patna Fault for the first time.

The seismites have been observed in the riverine sand bed of the Dardha River close to the East Patna Fault. Several types of liquefaction-induced deformation

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