

## Unraveling the Puzzle of Out-of-Sequence Thrusting in the Higher Himalaya: Focus on Jhakri-Chaura-Sarahan Thrust, Himachal Pradesh, India

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**Abstract :** The study examines the structural analysis of Chaura Thrust in Himachal Pradesh, India, focusing on the activation timing of Main Central Thrust (MCT) and South Tibetan Detachment System (STDS), mylonitised zones, and the characterization of box fold and its signature in the regional geology of Himachal Himalaya. The research aims to document the Higher Himalayan Out-of-Sequence Thrust (OOST) in Himachal Pradesh, which activated the MCTL and in between a zone south of MCTU. The study also documents the GBM-associated temperature range and the activation of Higher Himalayan Out-of-Sequence Thrust (OOST) in Himachal Pradesh. The findings contribute to understanding the structural analysis of Chaura Thrust and its signature in the regional geology of Himachal Himalaya. The study highlights the significance of microscopic studies in documenting mylonitized zones and identifying various types of crenulated schistosity. The study concludes that Chaura Thrust is not a blind thrust and details the field evidence for the OOST. The study characterizes the box fold and its signature in the regional geology of Himachal Himalaya. The study also documents the activation timing and ages of MCT, STDS, MBT, and MFT and identifies various types of crenulated schistosity under the microscope. The study also highlights the significance of microscopic studies in the structural analysis of Chaura Thrust. Finally, the study documents the activation of Higher Himalayan Out-of-Sequence Thrust (OOST) in Himachal Pradesh and the expectations for strain variation near the OOST.

**Keywords :** Chaura Thrust, Higher Himalaya, Jhakri Thrust, Main Central Thrust, Out-of-Sequence Thrust, Sarahan Thrust

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