

## Lithological control on pothole formation in two tectonically active regions within the Deccan Volcanic Province, Maharashtra, India

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Recent studies have shown that the Deccan Upland region of the Deccan Plateau is constituted of different blocks with uplifts, mainly during the Quaternary times. Bedrock incision in streambeds has also been the focus of many recent studies worldwide. This paper talks about the difference in the morphology of potholes within two river channels from two distinct tectonically active regions. These two river channels were made up of distinct lithologies: Nighoj area- Mainly compound flows constituting of dominantly compact and vesicular basalts and Patan area- Mainly simple flows constituting dominantly of flow top breccia. The depth and diameters of potholes formed were measured in the field.

The studies indicate that the potholes formed in the compact and vesicular basalts have an average of 1:1 diameter to depth ratio; whereas in the flow top breccia potholes have an average ratio of 1:6. This indicates that the vertical incision controlling the depth and the lateral incision controlling the diameter of the potholes are nearly equal in compact, vesicular and amygdaloidal basalts, as seen at Nighoj, giving rise to potholes that are deep and have large diameters. At Patan, in the flow top breccia the vertical incision rate is much higher than the lateral incision, as the circular movement of the tools is hampered by the breccia fragments, obstructing the formation of eddies, giving rise to potholes that are small in diameter but have depths that are nearly six times that of the diameter.

Keywords: Deccan Plateau, Bedrock incision, Morphology of potholes, Diameter to depth ratio