

Paper Number: 5373

**Signatures of Paleoseismic and paleo-tsunami from Badabalu, South Andaman, Andaman and Nicobar Island, India**

Malik, J. N.<sup>1</sup>, and Johnson, F. C.<sup>2</sup>

<sup>1</sup>Department of Earth Sciences, Indian Institute of Technology Kanpur, Kanpur 208016. India

<sup>2</sup>Department of Civil Engineering, Indian Institute of Technology Kanpur, Kanpur 208016. India

---

We studied shallow stratigraphy around Badabalu, South Andaman up to a depth of 2.5-3 m. We observed signatures of land-level change and paleo-tsunami deposits. The southern coast subsided by about 1 m during 2004 Sumatra-Andaman earthquake (Figure 1a-b). Several geoslice sections were obtained and trenches were excavated along the N-S transect across beach and back-marsh. The 2004 tsunami sand was identified in most of the sections, marked by coarser and thicker near shore and finer and thinner towards land. Paleo-tsunami deposits were identified in deeper geoslice sections inland from the present day beach ridge as well as from back-marsh. Units comprised of coarse sand unit with prominent bi-directional structure and coral debris are indicative of high-energy events (tsunami). Peaty unit sandwiched between sand units suggest land-level change during past earthquake. Sand units from deeper section are dated around AD 1440-1500, AD 1655-1950 and BC 2020-1880 (?). From the stratigraphic signatures it can be suggested that AD 1400 was a near source event and generated transoceanic tsunami as reported from other areas adjoining Indian Ocean. The AD 1600 event was local having epicentre near north Andaman. Signature of subsidence was observed at Port Blair caused by AD 1600 event (Malik et al. [1]).



Figure 1: (a) Google earth image showing beach ridge and a back marsh before 2004 Sumatra-Andaman earthquake, (b) Subsidence and inland migration of beach ridge. Formation of back marsh further inland.

*Reference:*

[1] Malik et al. (2011) *Geology* 39; no. 6; p. 559–562.

