



## **OSL dating and sedimentology of the Indian Ocean 2004 tsunami sediments from Thailand and the ~8.1ka (Storegga) tsunami deposit in eastern Scotland**

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Sediment samples of the 2004 Indian Ocean tsunami were collected between June and July 2005 in Thailand in order to characterize the tsunami sediments and to date them using optically stimulated luminescence dating. One aim of the project was to determine if modern tsunami sediments are bleached by sunlight during transport and deposition, which would support the use of OSL dating of tsunami sediments as reliable chronometers of burial age. Once tsunami sediments have been identified in uplifted and earthquake-prone settings, OSL dating could be used to determine their frequency and recurrence interval.

We sampled several units within the 2004 tsunami layers at Kao Lak, on the island of Ko Pi Pi and at Ko Lanta, and the tsunami event horizon itself is made up of 3-4 fining upwards packages representing the number of waves impacting the coast. Each individual unit within each package of the tsunami event horizon has different grain-size and OSL characteristics and not all of the units are well bleached. However, the upper finest layers of each package are the best bleached and, in general, the coarser lower units of each package are the least well bleached.

We have sampled and OSL dated a well exposed tsunami layer from Montrose Basin

on the east of Scotland. The layer has two well defined fining upwards packages and exhibits similar sedimentological characteristics to the modern tsunami deposits. The sedimentological implications on OSL behaviour of the modern and Holocene deposits will be discussed with suggested sampling strategies for OSL dating of ancient tsunami deposits.