

Interactive comment on “Sediment transport on the inner shelf off Khao Lak (Andaman Sea, Thailand) during the 2004 Indian Ocean tsunami and former storm events: evidence from foraminiferal transfer functions” by Y. Milker et al.

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Review on the article by

Y. Milker et. al. Sediment transport on the inner shelf off Khao Lak (Andaman Sea, Thailand) during the 2001 Indian Ocean tsunami and former storm events: Evidence from foraminiferal transfer functions.

This is a very interesting paper using a multiple of multivariate statistical methods to

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estimate sediment transport, which can only be precise in some degrees by organisms like foraminifera with a restricted depth distribution. In this case, symbiont-bearing benthic foraminifera are the most useful, because they are restricted to the photic zone and show extremely narrow depth zonations caused by the dependence on the two factors light and hydrodynamics. Thus their tests act as good indicators for both factors, which decrease with depth. But, their restricted distribution depends also on the trophication and almost all species avoid mixotrophic (and of course eutrophic) environments. This factor possibly explains the differences between both cores, where in the first larger foraminifera are abundant, becoming rare in the second core. This could be the fact that the estimation of transport by tsunami is less indicative for the second core in comparison to the first one. This possibly is caused by the fact by comparing depth distribution in surface sediments and interpret them for the core samples using transfer functions. This could be cause the bias in the estimation of onslope transport between both localities, because the one core originate from more oligotrophic conditions, while the second core clearly hints to mixotrophic conditions at least. Furthermore, foraminiferal downslope transport beside storm events, only by wave action, also strongly influence the distribution and masks the real depth distribution (see papers by Yordanova and Hohenegger and Briguglio et al.). Thus, the method for experiencing transport by tsunamis is new and correct, but the explanation must be taken more carefully incorporating the aspects explained before.

All in all, this paper uses modern methods (e.g. transfer functions supported by jackknife and bootstrap statistics) and gets interesting results. It could be made clearer that the differences between the cores in transport estimation and wave height could be caused by the strong differences in the environments.

Therefore, I recommend publication with minor corrections.

Only a very few remarks and corrections to the text: p.10, line 27: *B. schlumbergeri* is not mentioned before being a Borelis. p. 11, line 10: write *N. praecinctus* p. 16, line 22: which type of age dating will be or was performed? 'Preliminary' is insufficient. p. 32,

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Fig. 1: There are 4 cores marked by fitted circles, not the investigated and mentioned 2 cores!

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