

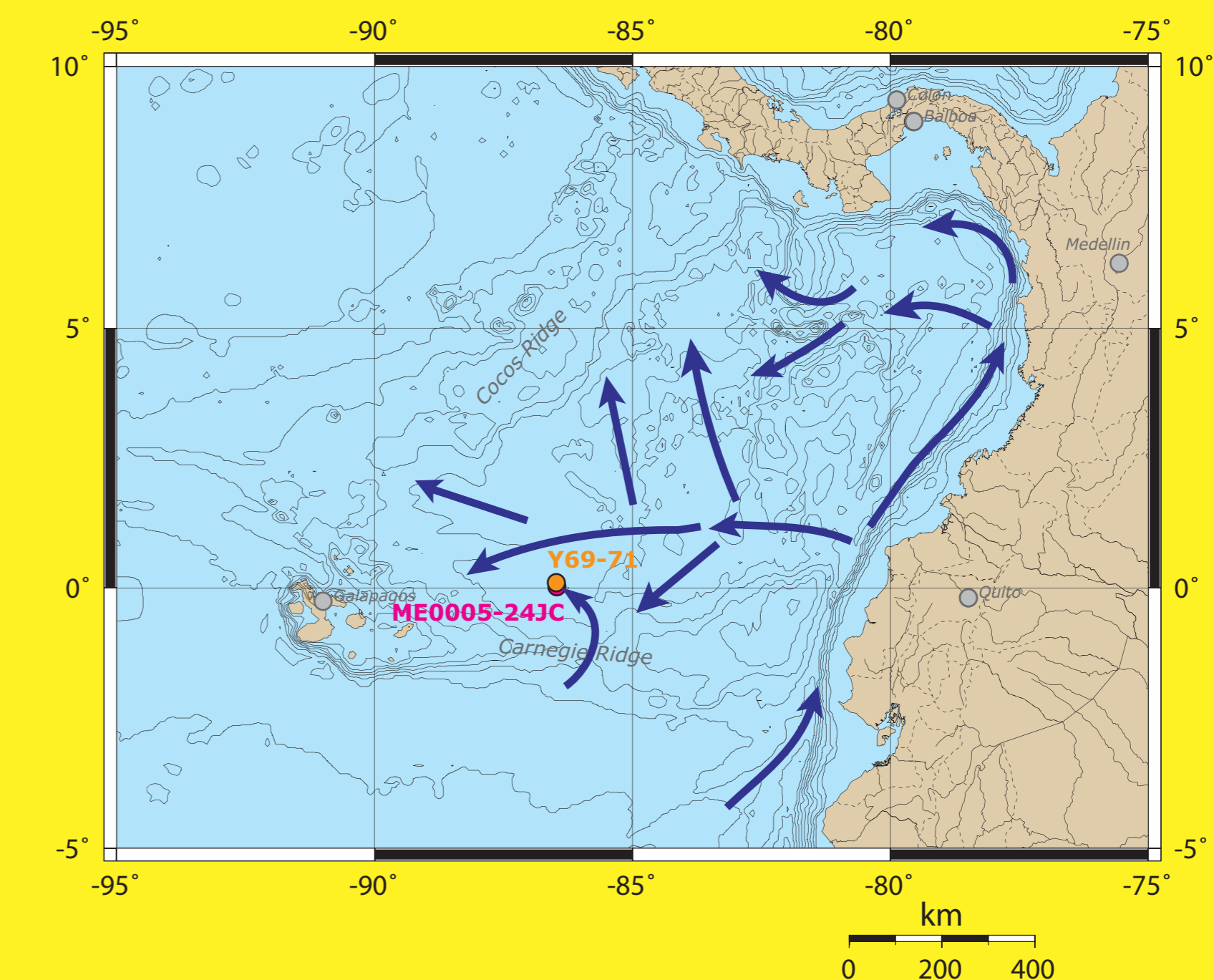
## INTRODUCTION

We present <sup>14</sup>C data of phytoplankton derived biomarkers (alkenones) and co-occurring foraminifer-tests as well as total organic carbon (TOC) to investigate possible input of (pre-aged) laterally advected material - resulting in apparent age-offsets of the sediment constituents - to our study sites Y69-71 and ME0005-24JC in the SW Panama Basin. For our study Holocene and late glacial samples were analysed.

## STUDY AREA PANAMA BASIN

The study area is located in the SW Panama Basin just north of the Carnegie Ridge. Core **Y69-71** was recovered at 0°06'N, 86°29'W (2740m) and **ME0005-24JC** was retrieved at 0°01.302'N, 86°27.788'W (2941m).

For the Panama Basin the principal inflow of bottom currents originating from the Peru Basin is the Ecuador Trench channel. A further inflow-passage is given across the central saddle of the Carnegie Ridge located between 85 and 86°W. This passage is influenced by episodic spillover of fast bottom currents rather than by perennial exchange with Peru Basin waters (LONSDALE 1977).



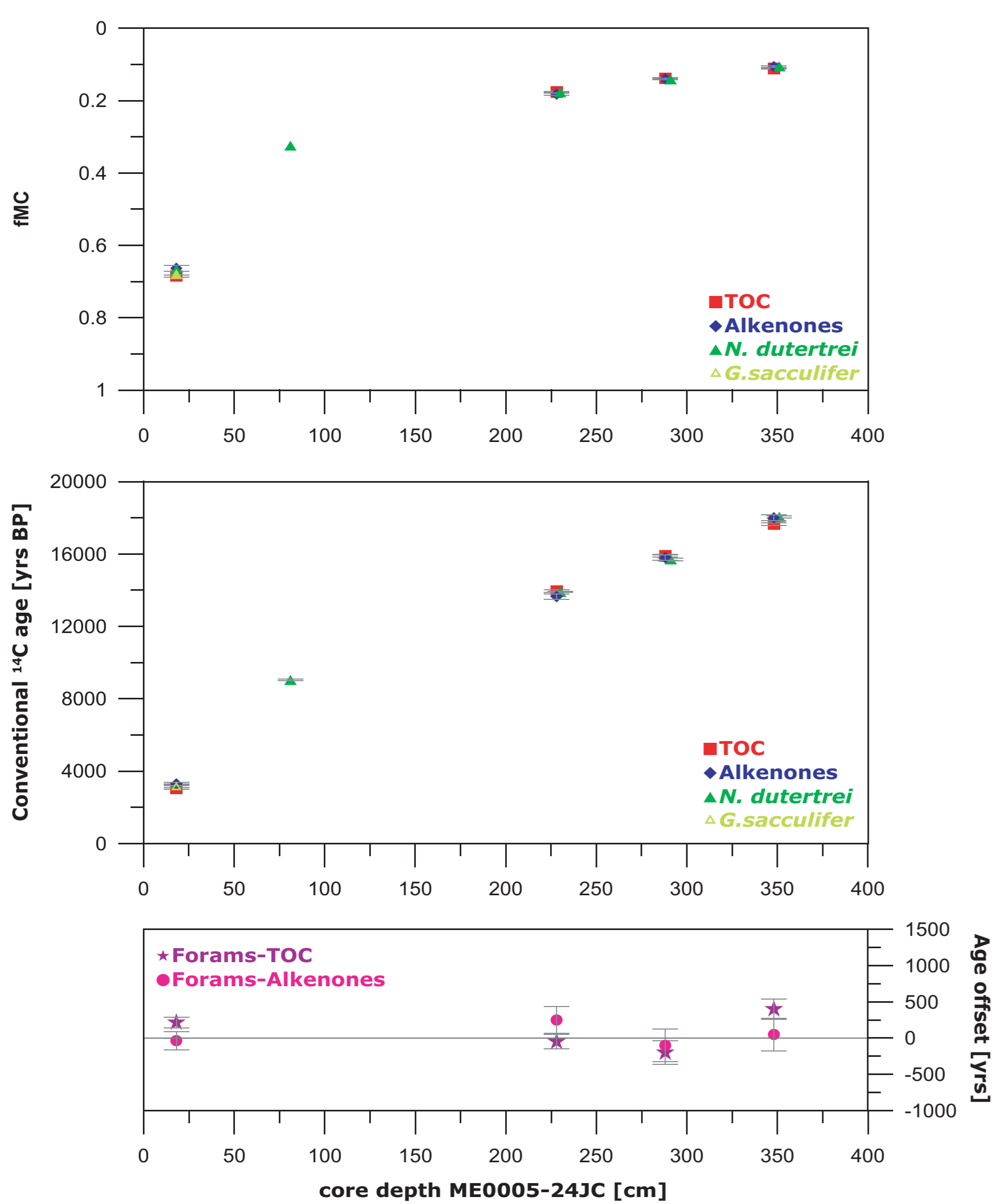
**Figure 1:** Map of the Panama Basin showing the core locations of Y69-71 (orange) and ME0005-24JC (pink), and bottom currents. Arrows are paths of bottom water circulation inferred from distribution of water properties (after LONSDALE 1977).

## ME0005-24JC

**Figure 2** shows no significant age-offsets between the planktonic foraminifera and alkenones as well as TOC. The good agreement between TOC and foram ages suggests that advection of pre-aged organic matter is negligible at this site. Likewise there is no evidence for lateral advection of pre-aged alkenones.

Independent proxies for sediment transport processes provide additional evidence. <sup>230</sup>Th-based focusing factors for core ME0005-24JC

(**Figure 3**, KIENAST et al. 2007) are as high as  $\Psi=7.5$  for the deglaciation and amount up to  $\Psi=4$  for the Holocene, therefore implying significant contribution of laterally supplied sediment to this specific location. The supplied material is likely to have been transported by bottom currents.



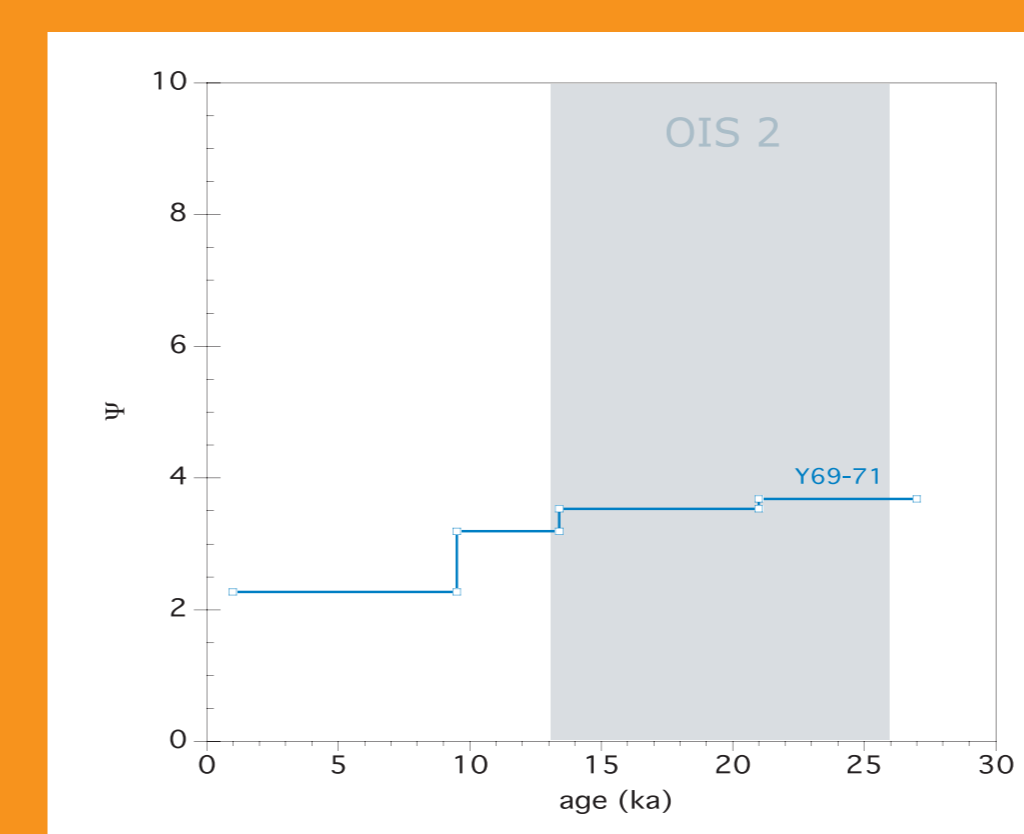
**Figure 2:** Fraction modern carbon and conventional radiocarbon ages of alkenones, foraminifera (*N. dutertrei*) and Total Organic Carbon (TOC) for core ME0005-24JC and the age-offsets of alkenones and TOC related to the foraminifera radiocarbon ages.

## Y69-71

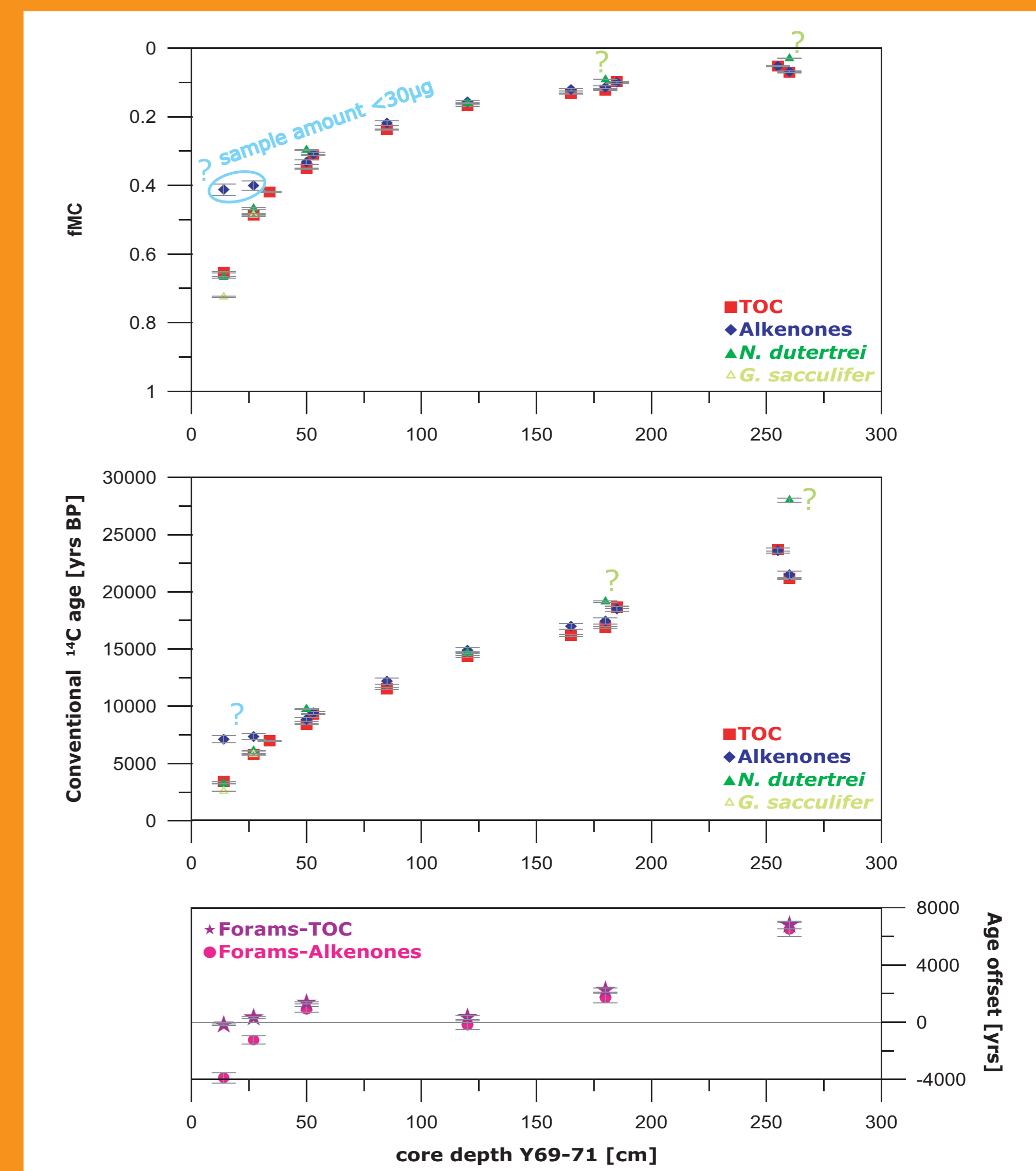
Radiocarbon data for core Y69-71 are less conclusive (**Figure 4**). In the deglacial section, ages of all dated sediment constituents agree rather well. In particular, good agreement is observed between TOC and alkenones. Alkenone dates from the top of the core (Holocene) are less reliable due to small sample size.

Therefore we suggest no age offset between the analysed sediment constituents are prominent.

The <sup>230</sup>Th-analysis for core Y69-71 of KIENAST et al. (2007) show focusing factors of up to  $\Psi=3.5$  for OIS 2 and as high as  $\Psi=2.5$  for the Holocene (**Figure 5**), implying addition of large amounts of laterally supplied sediment.



**Figure 5:** Focusing factors for the time intervals from the core top to 9.5, 9.5–13.4, 13.4 to 21, and 21–27 ka (KIENAST et al. 2007, modified).



**Figure 4:** Fraction modern carbon and conventional radiocarbon ages of alkenones, foraminifera (*N. dutertrei* and *G. sacculifer*) and Total Organic Carbon (TOC) for core Y69-71 and the age-offsets of alkenones and TOC related to the foraminifera radiocarbon ages.

## DISCUSSION & CONCLUSION

The age-relationships between foraminifera and alkenones do not imply significant contributions of pre-aged material. **This suggests that lateral sediment transport of pre-aged material did not substantially affect the core locations of Y69-71 and ME0005-24JC.** However, considering the <sup>230</sup>Th data from KIENAST et al. (2007) which show focusing factors of up to  $\Psi=3.5$  for core Y69-71 and up to  $\Psi=7.5$  for core ME0005-24JC, we deduce that laterally supplied material has not been eroded elsewhere but rather is transported by bottom currents rapidly after particle formation.

## ACKNOWLEDGEMENTS

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...please ask!