TEI's in the Aegean Sea:
Baseline Information

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Hydrodynamic regime

- North Aegean: dense water formation area
  - 2 major events in 1987 and 1993

- South Aegean (Cretan Sea): Also a dense water formation area with variable characteristics.
  - EMT evolution in early 90’s

~~~900 *10^9 m^3 y^-1~~~ BSW
S= ~ 29

Extracted from drifter campaigns (2002-2003), Olson et al., 2007

Water cascades
A productivity gradient between the North and South Aegean.  
(Siokou-Frangou et al, 2002)

An extensive BNL in the North Aegean.  
(Karageorgis et al, 2008)
What have we learned from TEI’s distribution

Conservative behaviour of most TEI’s during mixing of BSW and LIW

FIG. 3. $^{137}$Cs concentrations vs. Salinity % in surface water of the Aegean Sea.

Delfanti et al (2005)

Fig. 4. Correlation of trace metals with respect to salinity in the upper ($\sigma < 28.0$) mixed layer, during winter (a) and summer (b) ($p > 0.05$).

Zeri and Voutsinou-Taliadouri (2003)
What have we learned from TEI’s distribution

Deep basin enrichments in the N. Aegean

Deep Cs\textsuperscript{137} enrichments after 1984 in N. and S. Aegean and also in surface waters of South Aegean Sea.

Zeri and Voutsinou-Taliadouri (2003)

Delfanti et al (2005)
Questions raised

- How are the enrichments in TEI’s observed in the North Aegean balanced?
- What is the role of particles in the North Aegean Sea in uptake and regeneration of TE’s?
- To what extent deep water formation, taking place in the North Aegean, influences the distribution of TE’s in the Cretan Sea and subsequently the Levantine?
Proposed strategy under GEOTRACES

Two transects at the Cretan Straits

Two process sites: MNB1 in the North
E1M3A in the South