

(Hg and other) trace metals in the Gulf of Lions

Lars-Eric Heimbürger

&

Marion Stabholz

Background: Examples of particulate OC & trace metal distribution in GOL

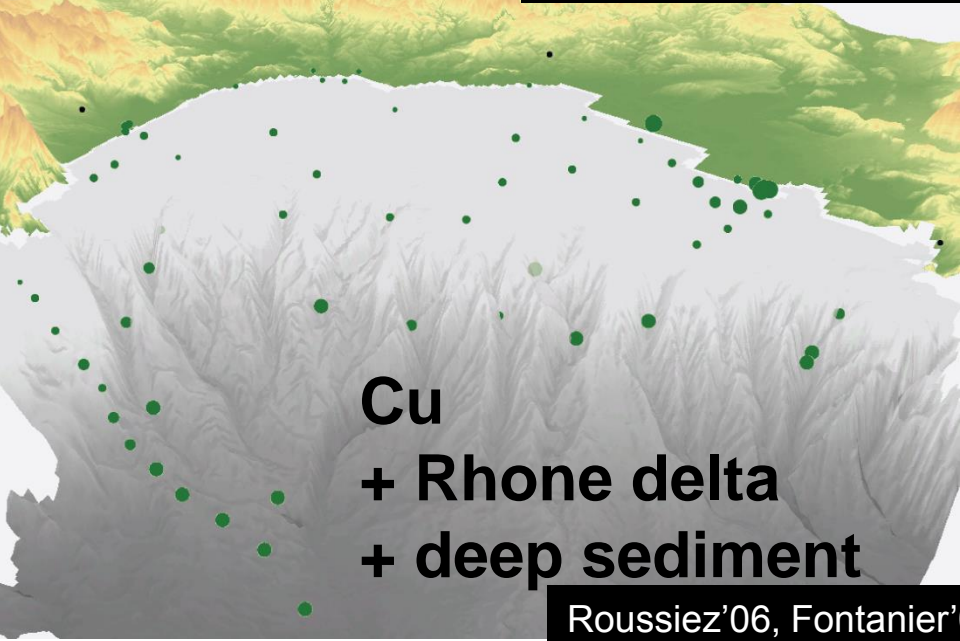


OC
+ shelf
- Deep sediment

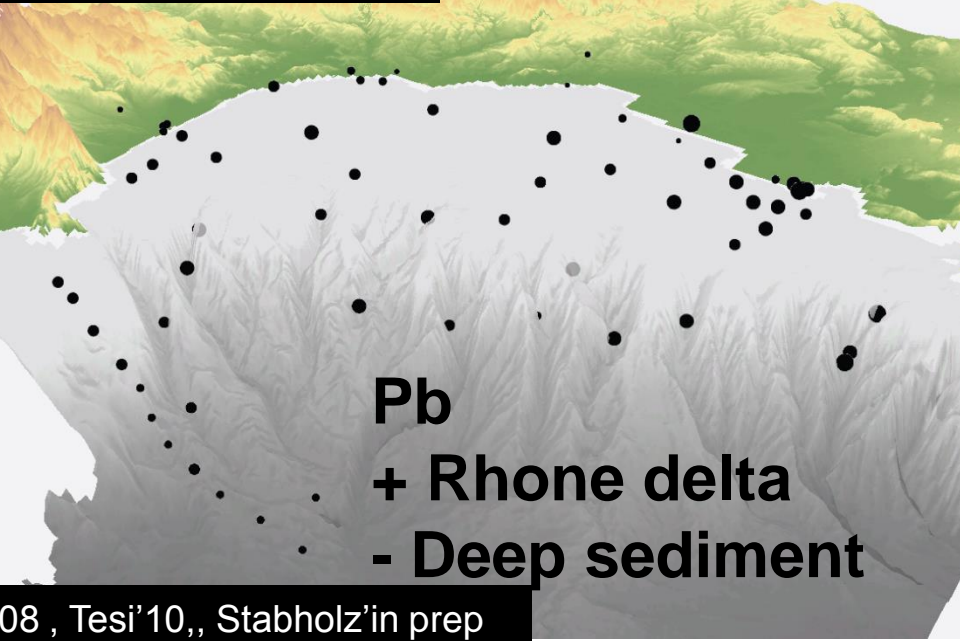


Co
+ slope/rise
- River delta

What are the processes governing this variability?
Where goes the dissolved fraction?

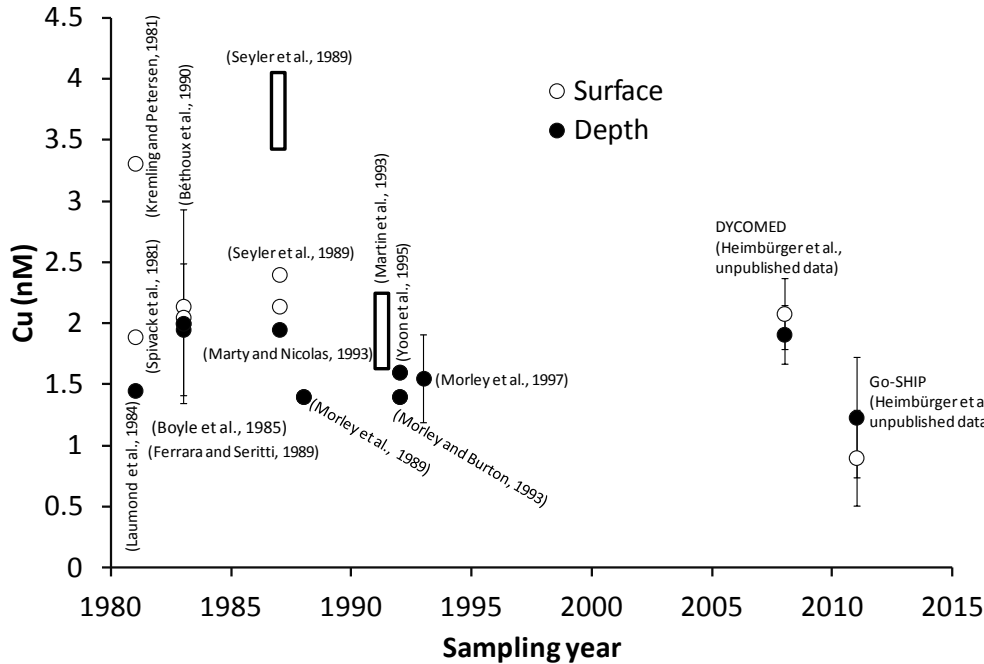


Cu
+ Rhone delta
+ deep sediment



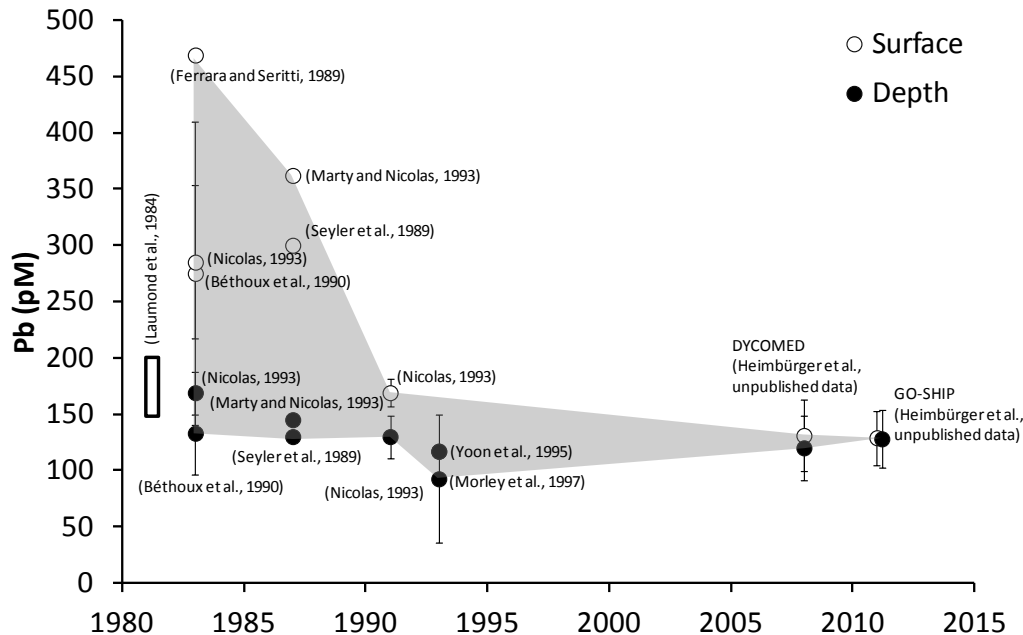
Pb
+ Rhone delta
- Deep sediment

Background: Examples of dissolved trace metal distribution in NWMed

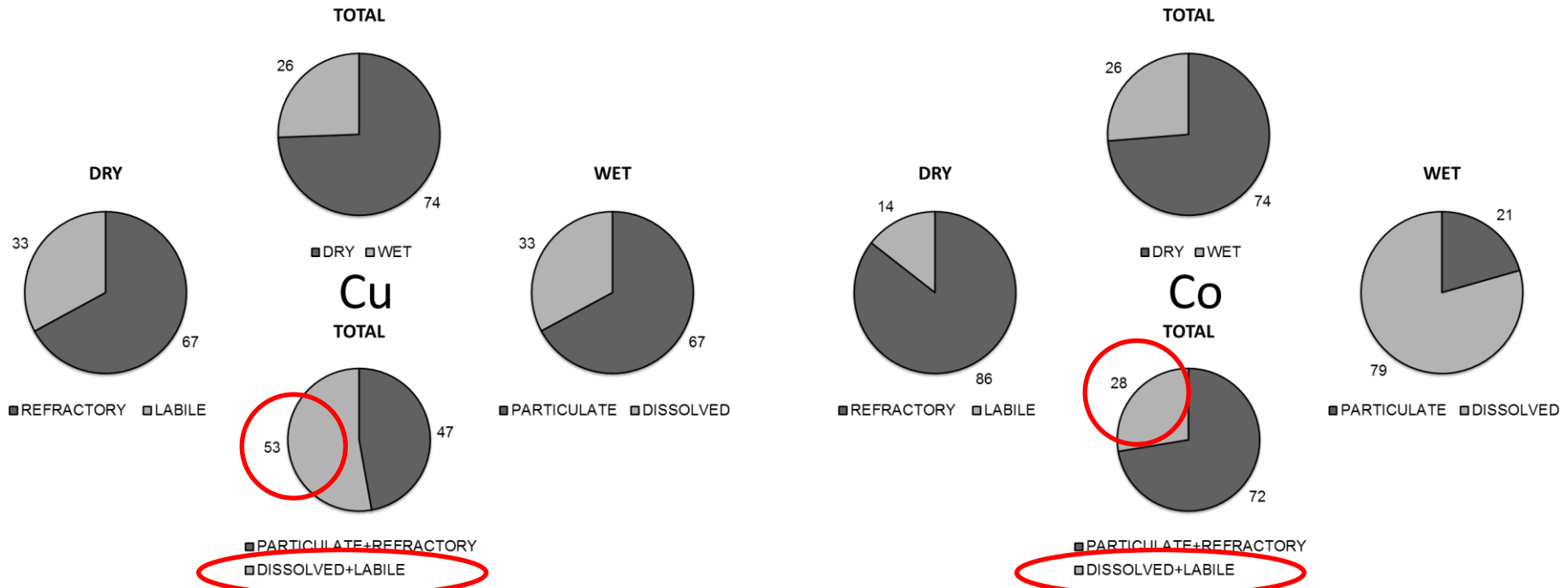


- after >30y research too few data
- difficult to ascertain importance of individual TM sources:

- Atmosphere
- Rivers
- SGDs
- entering NAW, LIW, etc.
- *release from margin sediments?*



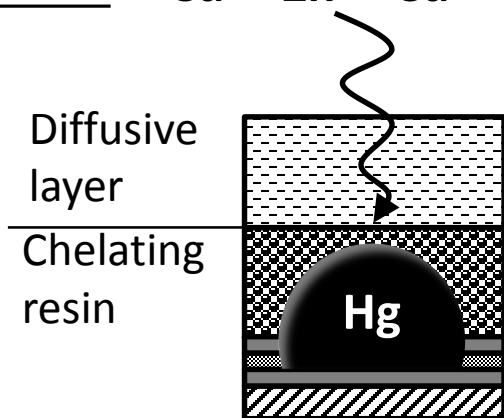
Background: Examples of dissolved – particulate partitioning of atmospheric deposition (Cap Ferrat 2006-2010)



- Wet deposition (rain) filtered (0.45 μ m) to recover particle + dissolved fractions
- Dry deposition (dust) + MilliQ filtered to recover refractory and labile fraction
- ✓ Both wet and dry deposition yield soluble TM fractions (even “crustal” TMs)
- ✓ Need for incubations with “real” sea water

Strategy: High resolution measurements of dissolved fraction using *Voltammetric in situ TM profiler (VIP)*

ppb level: Fe Mn
ppt level: Cu Zn Cd Pb



Gel Integrated MicroElectrode

- commercially available (partly financed)
- simple cost-effective hands-on tool
- routinely used for fresh water
- recently used in estuaries
- **high resolution analysis:**
 - ✓ sediment incubation (1)
 - ✓ River flash flood sampling (2)



(1)



(2)

MERCI

