

SHALLOW-HYDROTHERMAL SYSTEMS

DYNAMICS OF AGED-CARBON INJECTIONS

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Hydrothermal systems shape the microbial community and introduce ¹⁴C-free carbon into the marine carbon cycle. However, we do not know to what extent and which microorganisms utilize that carbon source.

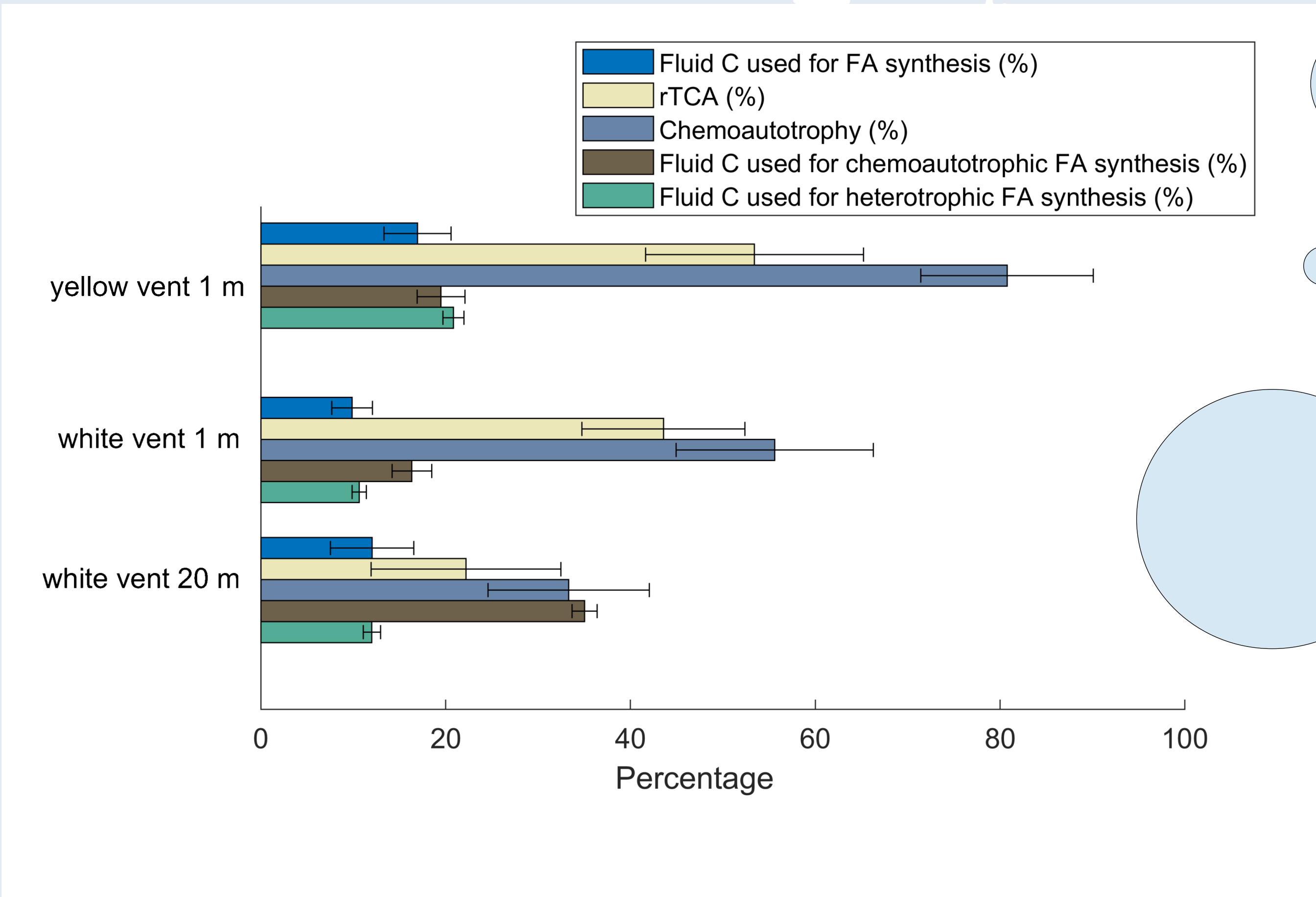
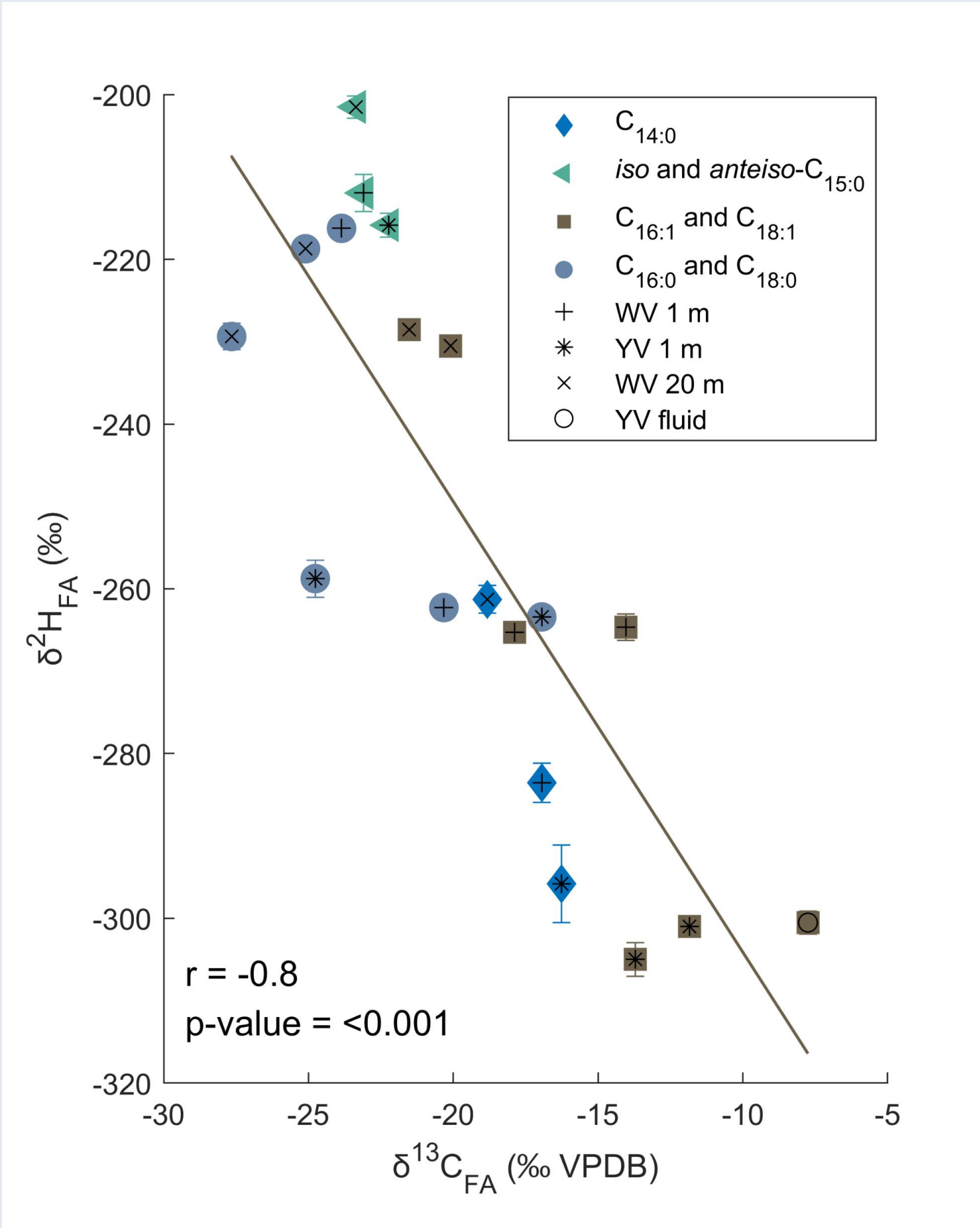
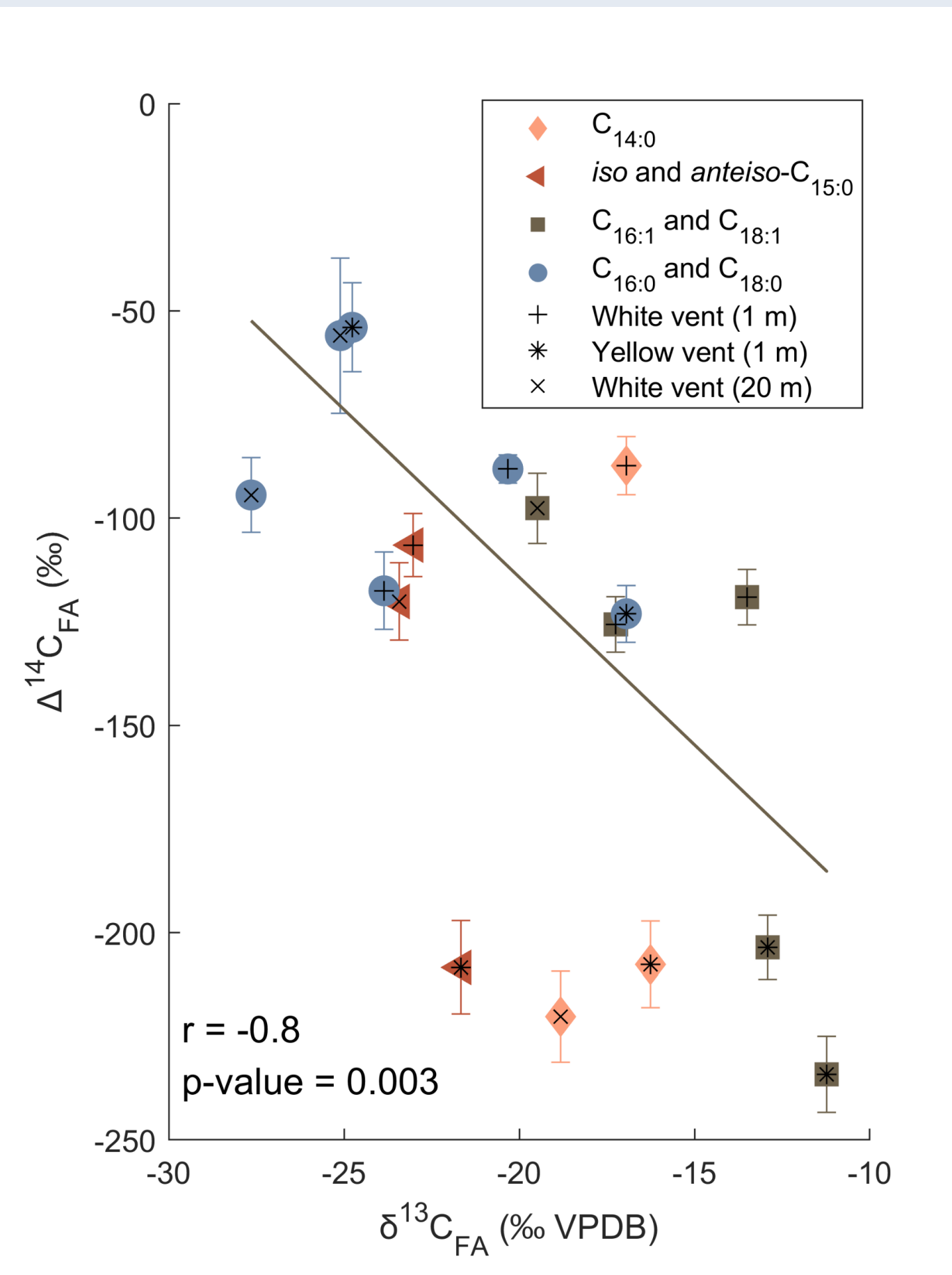
We examine the distribution of ¹⁴C and ¹³C content of bulk carbon pools (DIC, POC) and fatty acids at shallow hydrothermal systems.

Two hydrothermal systems off **Kueishantao** (Taiwan, 10 m water depth) and **Milos** (Greece, 100 to 200 m water depth) are the focus of this study.

Chemoautotrophic sulfur-oxidizing bacteria drive carbon uptake directly at hydrothermal vents, shaping the ¹³C and ¹⁴C values of fatty acids

KUEISHANTAO (TAIWAN)

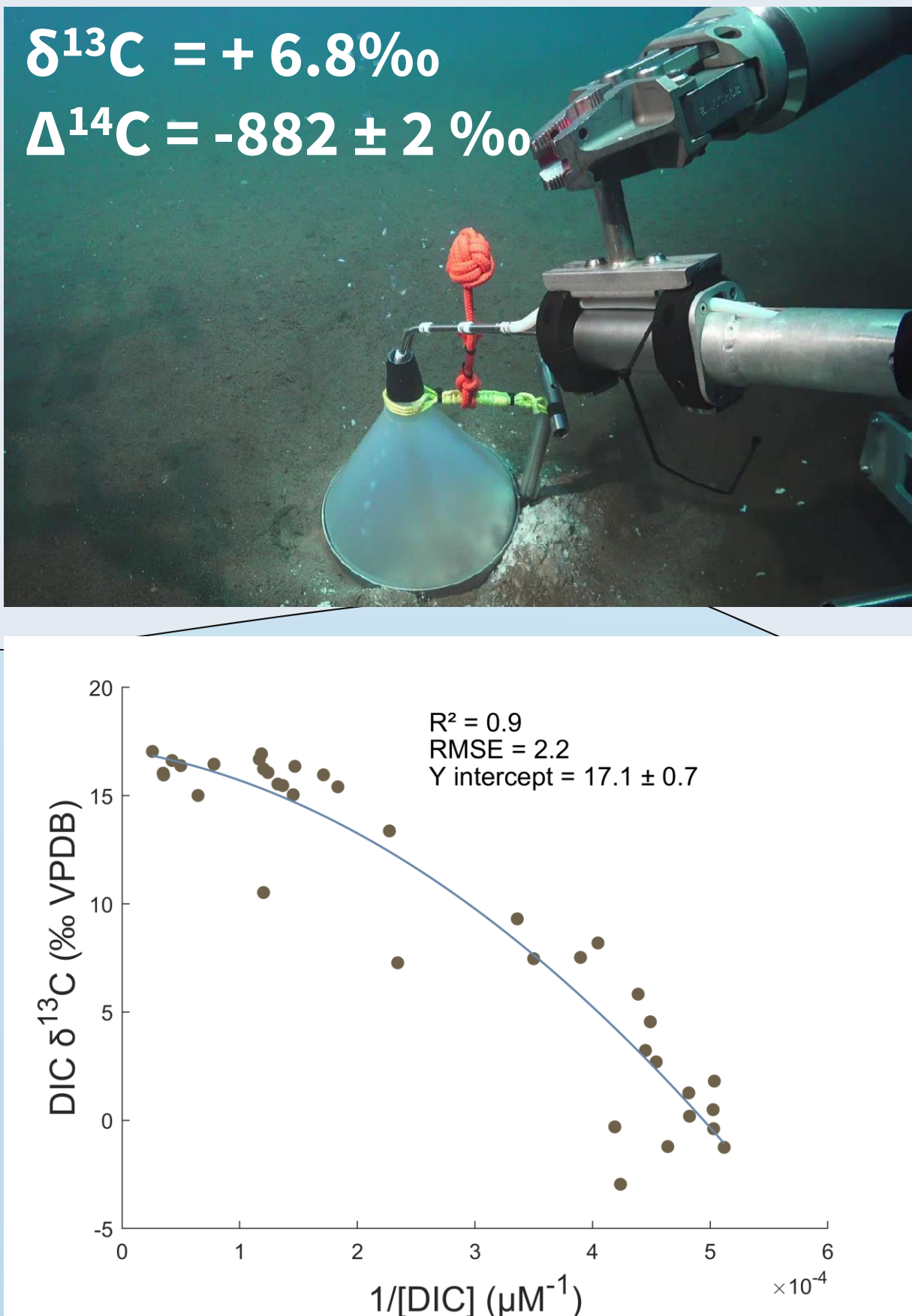
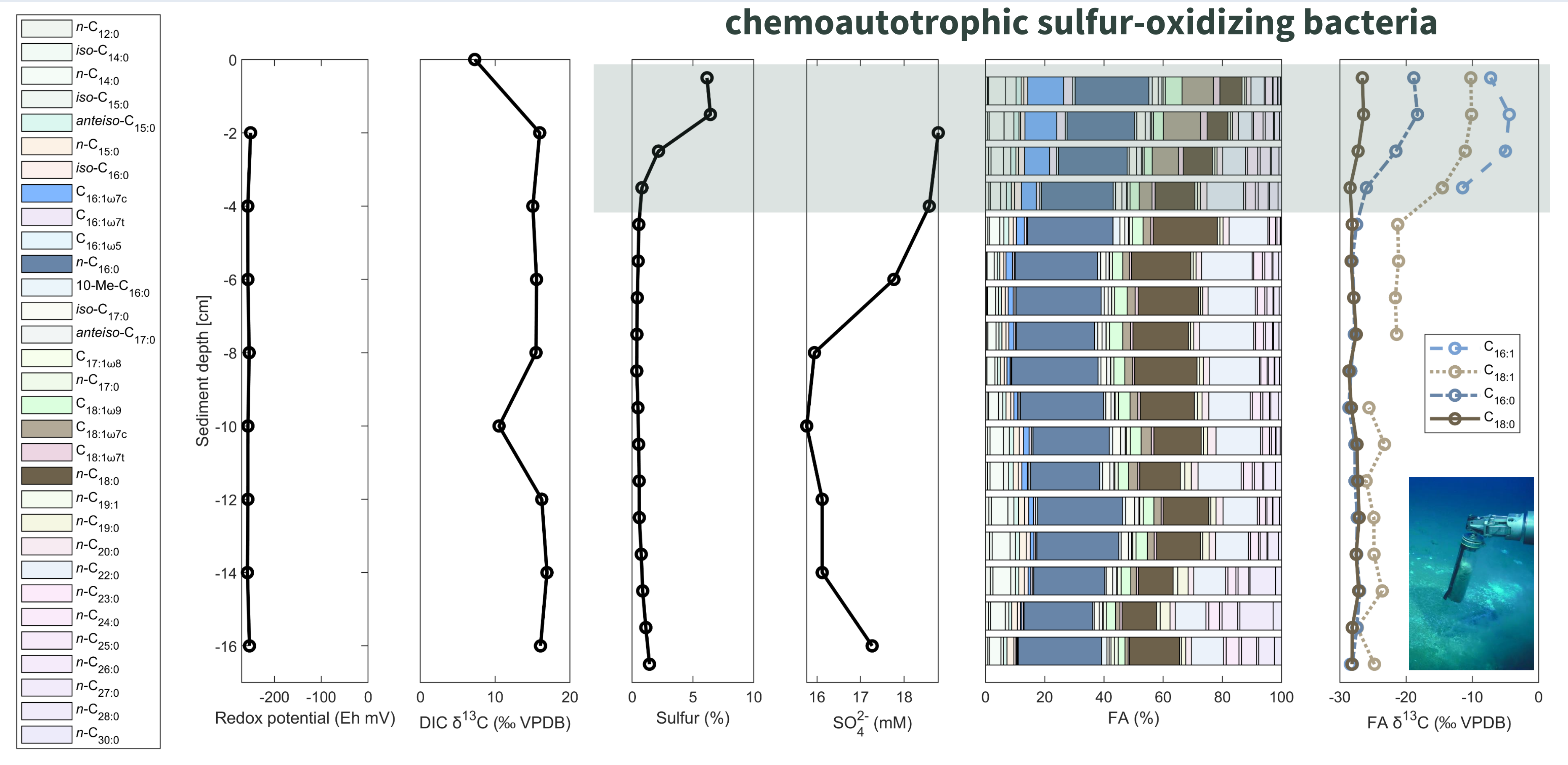
Chemoautotrophy (rTCA) is the main uptake mechanism for ¹⁴C-depleted carbon



But: The similarly high or higher uptake of vent C at the sampling site 20 m away from the white vent orifice indicates that **vent C influences water column photoautotrophy**

MILOS (GREECE)

DIC and lipid-derived fatty acids are enriched in ¹³C and depleted in ¹⁴C



Do you have any questions about my work?



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