Geophysical Research Abstracts
Vol. 13, EGU2011-3950, 2011
EGU General Assembly 2011

The response of Emiliania huxleyi to P-limitation: a comparison of Eastern- and Western Mediterranean strains; part 2

Angela Oviedo (1), Gerald Langer (), and Patrizia Ziveri ()

(1) ICTA, Autonomous University of Barcelona (UAB), 08193 Bellaterra, Spain, (2) Alfred Wegener Institute for Polar and Marine Research, 27570 Bremerhaven, Germany

Calcification rate and cell size of E. huxleyi have been shown to increase or to remain unaltered under phosphate limitation in cultures and mesocosm experiments. However, in none of these experiments potential differences between strains isolated from places characterized by different phosphate levels have been investigated. Given the strain specific calcification rates observed for Emiliania huxleyi in response to changes in carbonate chemistry in culture experiments, we hypothesize that sensitivity of calcification to nutrient limitation can also be strain-specific. The Mediterranean Sea is classified from mesotrophic to extremely oligotrophic along a western - eastern gradient, with phosphate concentration in the Eastern basin among the lowest worldwide; a feature that could be amplified due to global warming. The response of three western and three eastern E. huxleyi strains to phosphate limitation was compared. Particulate inorganic carbon production, coccospheres size and coccoliths morphology were analyzed.