Geophysical Research Abstracts,
Vol. 10, EGU2008-A-08731, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-08731
EGU General Assembly 2008

Carbon dioxide variability in the Northern Adriatic Sea

D. Turk (1), M. DeGrandpre (2), J. Faganeli (3), V. Malacic (3), W.R. McGillis (4)

(1) Dept. of Oceanography, Dalhousie University, Canada, (2) Department of Chemistry, The University of Montana, (3) National Institute of Biology, Marine Biology Station, Slovenia, (4) Lamont-Doherty Earth Observatory and Earth and Environmental Engineering, Columbia University, USA

Coastal marine regions such as the Northern Adriatic Sea are strongly affected by changes in climate and play an important role in biological productivity and global sea-to-air CO2 flux. These regions serve as the link between carbon cycling on land and the ocean? interior and because many coastal regions have little carbon data, their role in the global carbon cycle is highly uncertain. To date, in-depth studies of carbon cycling in coastal waters have been mostly limited to coastal transects that provide interesting snapshots of carbon dynamics. No CO2 flux data are currently available in the Northern Adriatic. The Northern Adriatic, being one of the most productive regions in the Mediterranean and affected by freshwater input, eutrophication and large changes of air-sea exchange during Bora high wind events, makes this region an excellent study site for investigations of air-sea interaction and changes in biology and carbon chemistry.

Here we present the first measurements of air and water CO2 flux in the Northern Adriatic. The aqueous CO2 was measured at the Coastal Oceanographic buoy Piran, Slovenia using the SAMI-CO2 sensor during spring (April, May) and late summer and fall (August–October) 2007. CO2 measurements were combined with hydrological observations and discrete samples of DIC, pH and Talk to evaluate the processes that control inorganic carbon cycling in the region.