



## **Origin of source waters of the West African upwelling region – a model study**

**M. S. Glessmer** (1), A. Oschlies (1) and C. Eden (1)

IfM-GEOMAR Kiel

In this study we investigate to what extent the water mass properties including temperature, salinity, and dissolved oxygen and carbon in the upwelling regions off Mauritania are controlled by ventilation patterns, transit times and biological production.

In a model trajectory study, 'floats' are deployed in the upwelling region and then integrated backwards in time using three-daily velocity fields from a 1/12 degree North Atlantic model. With this method, source regions of the upwelled water masses are investigated and found to be mainly the North Equatorial Undercurrent (NEUC) for water masses being upwelled south of 22° N.

In a regional setup of the model, coupled with a simple NPZD model, we investigate the sensitivity of the simulated transport pathways and transit times to the explicit inclusion of mesoscale and sub-mesoscale features. We discuss possible ways to parameterise the relevant transport processes in coarse resolution climate models.