

NITROGEN FIXATION IN THE UPWELLING REGION OFF NW IBERIA

Biological N_2 -fixation in the ocean has long been attributed mainly to the genus *Trichodesmium*, and considered to be restricted to nitrogen depleted surface waters of tropical and subtropical regions. However, the discovery in the last years of a larger diversity of marine diazotrophs suggests that N_2 -fixation may be relevant in a wider range of environments. The NICANOR project investigates the seasonal variability in N_2 -fixation, its importance as a source of new nitrogen, and also identifies the main N_2 -fixers in the upwelling ecosystem of NW Iberian Peninsula. For that, we use a multidisciplinary approach combining microstructure turbulence observations in order to compute nitrate diffusivity, size-fractionated $^{15}N_2$ -uptake measurements and advanced molecular techniques. Our preliminary results indicate that the rates of N_2 -fixation in this upwelling ecosystem are comparable to the rates found in tropical and subtropical regions. Most of the N_2 -fixation activity is present in the small size fraction ($<10 \mu m$), pointing to the relevance of unicellular nitrogen fixers in this coastal system.