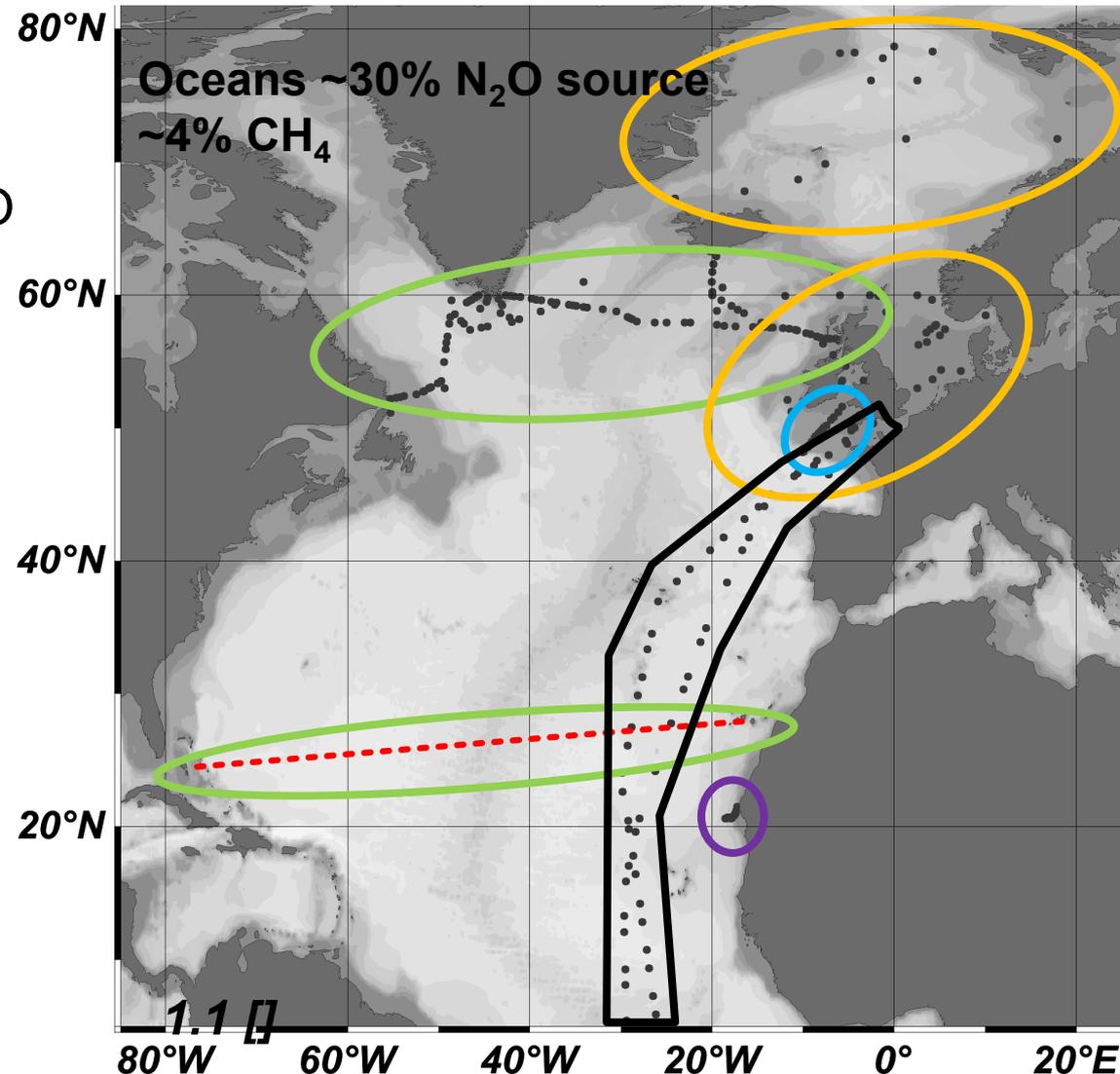


To date - determination of dissolved and atmospheric N_2O and CH_4 to characterise water column source-sink status and air-sea fluxes using GC-ECD and GC-FID

Current integration of PICARRO and LiCOR with seawater equilibrator to provide high frequency, high precision measurements of surface seawater and atmospheric N_2O , CH_4 , CO_2 .

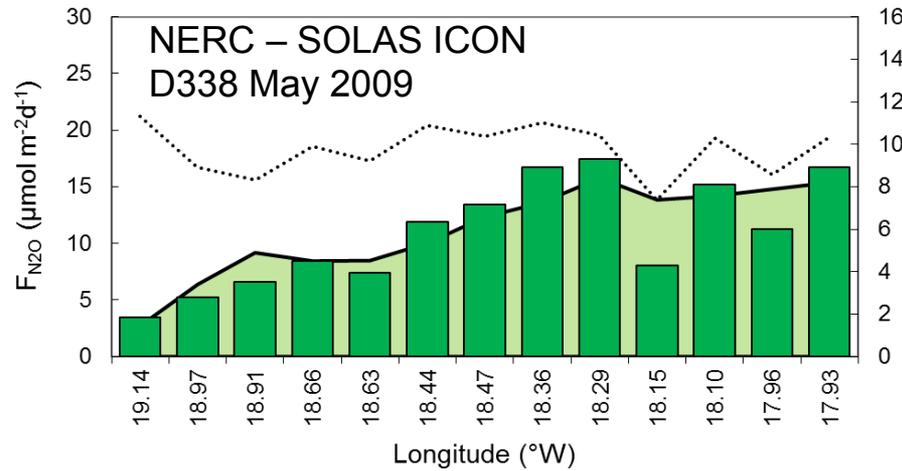
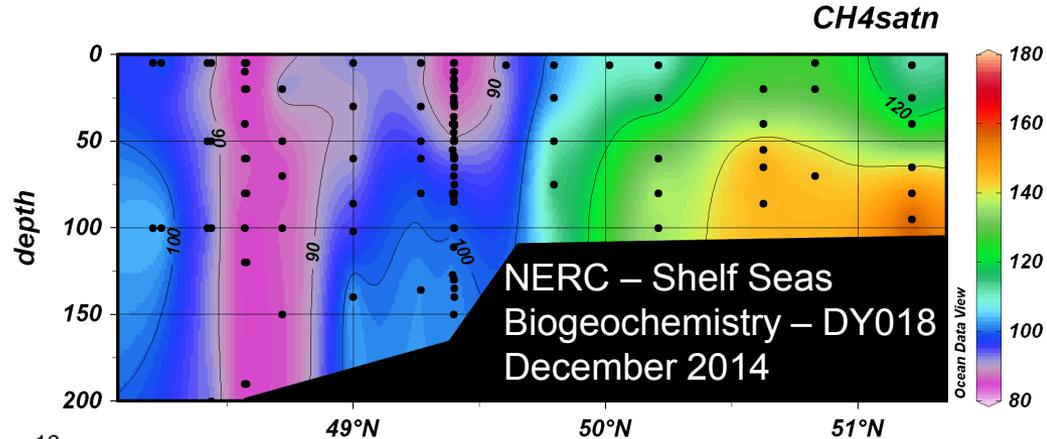
Recent observations (2009-16)

- NW Africa upwelling (SOLAS)
- UKOA
- RAGGNARRoCC
- Celtic Sea (SSB)
- AMT



Ocean Source – Sink

The mixing of deep oceanic waters with low [CH₄] to the surface at the continental shelf break of the Celtic Sea provides localised areas of source and sink to the atmosphere



Air-Sea Exchange

A “hot-spot” of N₂O release to the air is sensitive to wind speed and decreases with the progression of upwelling filaments offshore from NW African coast

Impact of Ocean Acidification

The oceans are becoming increasingly more acidic as CO₂ is absorbed from the Atmosphere. N₂O production in polar and sub-polar waters was inhibited by increasing CO₂

