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# Biogeochemical time-series from the ocean interior to the seafloor at the Porcupine Abyssal Plain (PAP) Observatory (49˚N, 16.5˚W)

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We present a suite of multidisciplinary biogeochemical data measured *in situ* at the Porcupine Abyssal Plain (PAP) observatory in the North East Atlantic (49˚N, 16.5˚W) over the past 20 years. The observations cover the entire water column and the seafloor beneath (4800 m). This includes autonomous water column measurements of temperature and salinity (to 1000 m) and biogeochemical data at 30 m (including nitrate, chlorophyll and $CO_2$). In addition, deep ocean studies from time-lapse photography, trawls, cores and deep sediment traps have revealed substantial changes in the benthic community since 1989.

This considerably long-term high temporal resolution data set will be discussed in terms of coupled inter-annual variability between the pelagic and benthic environments. In addition, the importance of the PAP data set in terms of understanding regional and global change will also be addressed.

This multidisciplinary data set makes the PAP site a unique surface to benthic observatory in the NE Atlantic. Future developments of the PAP site both within the context of EuroSITES, an EU FP7 project to integrate European deep ocean observatories, and other relevant European and international endeavours will be discussed.