

Evaluation of metabolic rates in various communities in the Bay of Calvi using optodes based on different approaches.

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In the Bay of Calvi (Mediterranean Sea), we investigate since late-2006 metabolic rates (gross primary production (GPP) and community respiration (CR)) related to various communities (*Posidonia oceanica* seagrass meadow, *Posidonia oceanica* litter, epilithic macro-algae) using optodes based on different approaches (moorings and benthic incubations). Since August 2006, we maintained a shallow mooring at 10 m depth with an array of 3 optodes logging temperature and oxygen hourly. Based on oxygen mass balance, GPP and CR values were derived daily for the last 3 years, allowing analysis of seasonal and inter-annual variability of GPP and CR over the *Posidonia oceanica* seagrass meadow. This variability is discussed in relation to variable climatic forcings : mild versus average winter conditions, stormier versus average fall conditions, etc... We also used optodes on benthic chambers over *Posidonia oceanica* seagrass meadow, *Posidonia oceanica* litter, epilithic macro-algae. Over the *Posidonia oceanica* seagrass meadow, these incubations allow to analyse changing rates of nighttime CR, and to evaluate the difference between daytime and nighttime CR. Over the *Posidonia oceanica* litter, these incubations reveal surprisingly highly variables GPP and CR values. Finally, these incubations also allow deriving GPP and CR values from epilithic macro-algae, the second most important benthic compartment of in the Bay of Calvi.

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