Dataset name: **Oxygen incubations**

|  |  |
| --- | --- |
| Parameter: | * **Net Community Production (NCP)**
* **Dark Community Respiration (DCR)**
* **Bacterial respiration (BR)**
 |

PROJECT TITLE: **MOBYDICK**

Oceanographic cruise: **MOBYDICK**

Start date: **18/02/2018**

End date: **27/03/2018**

Project manager: **Bernard Quéguiner** bernard.queguiner@mio.osupytheas.fr

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Chief scientist: **Ingrid Obernosterer** ingrid.obernosterer@obs-banyuls.fr

Address: **Laboratoire d’Océanographie Microbienne**

 **Observatoire Océanologique de Banyuls sur mer**

 **66650 Banyuls sur mer, France**

 Geographic information: **Indian sector of the Southern Ocean**

 Latitude: **49.5°S – 52.5°S**

 Longitude: **67,0°E – 74.5°E**

Parameter supervisor: **Ingrid Obernosterer**

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# OPERATIONS

## Sampling device(s)

Water samples were collected from the rosette bottles (CTD\_NCP) at every station at selected photometric depths (50%, 25%, 4%, and 1% surface irradiance, respective samplign depths of 10, 20, 40, and 60 m for NCP and DCR, 50%, and 1% surface irradiance for BR).

## List of stations sampled

Experiments were conducted at each station : M1\_1, M2\_1, M2\_2, M2\_3, M3\_1, M3\_3, M4\_1, and M4\_2.

# INSTRUMENTS

Instrument Type: **Spectrophometer**

Manufacturer: **Hitachi Digilab**

Model: **U3010**

Instrument Features / Calibration: N/A

# DESCRIPTION of PARAMETERS

## Measurement details

For NCP and DCR, raw seawater was collected directly from rosette bottles. For BR, collected seawater was filtered on 0.8 µm polycarbonate filters using a 142 mm filtration system and a peristaltic pump. Biological Oxygen Demand (BOD) bottles were filled with raw seawater (NCP, DRC) or < 0.8 µm filtered seawater (BR) by siphoning, using silicon tubing. For NCP and DCR BOD bottles were incubated for 24h in on–deck incubators cooled by running surface water, and the incubations for BR were done in the dark in a temperature–controlled laboratory incubator with incubation times varying between 1–4 days.

## Analytical procedure

All rates were determined from changes in the dissolved oxygen (O2) concentration during the respective incubations. All measurements were performed in 5 replicate bottles. Dissolved oxygen concentrations were determined by the Winkler method (Winkler, 1888) and the spectrophotometric detection of iodine (Labasque *et al.,* 2004).

## Units

(µmol O2 L–1) d–1

## Sensor precision

0.5 %

## Post-cruise data analysis/treatment required

N/A

## Estimated Date of Delivery

3 months after cruise end.

# BIBLIOGRAPHY

Labasque T., Chaumery C., Aminot A., Kergoat G., 2004. Spectrophotometric Winkler determination of dissolved oxygen: re-examination of critical factors and reliability. *Marine Chemistry*, **88**, 53-60.

Winkler L.W., 1888. Die Bestimmung des im Wasser gelösten Sauerstoffes. *Berichte der deutschen chemischen Gesellschaft*, **21**(2), 2843-2854.