META\_INFORMATION\_PARAMETRES / PARAMETERS

(à remplir par le responsable du paramètre / *to be filled by the PI* )

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| Date de création | 21-Jan-14 | ***created on*** |
| Date: de dernière mise à jour | 21-Jan-14 | ***last update*** |

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| PARAMETRES CONCERNES  | *PARAMETERS* |

|  |  |  |  |
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| **Mode d’échantillonnage** | **No parametre**  | **nom parametre** | **Status : [non] valid**  |
| Rosette | 559 | Diversity of AAP bacteria  |  |
| Rosette | 558 | AAP bacteria limitation factors |  |

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| PROJET ETUDE  | *PROJECT TITLE* |

Diversity of aerobic anoxygenic photoheterotrophic bacteria (AAPB) and determination of their limitation factors

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| RESPONSABLE SCIENTIFIQUE  | *PRINCIPAL INVESTIGATOR* |

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| --- | --- | --- | --- | --- |
| **Nom /*****name*** | **adresse /** ***address*** | **téléphone / *phone number*** | **fax /*****fax number*** | **adresse mél /*****email address*** |
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| BREVE DESCRIPTION DU PROJET  | *BRIEF DESCRIPTION OF PROJECT* |

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| DESCRIPTION DES PARAMETRES | *PARAMETERS DESCRIPTION* |
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# Ce qui a été mesuré et **comment** **(méthode analytique** et/ou références )/

#

* Diversity of AAP bacteria (cultures, molecular biology)

AAP bacterial colonies were obtained by spreading 50 to 100 μl of seawater samples on three different agar media. The molecular approach consisted in isolating the total RNA from seawater samples, performing a retrotranscription of *puf*M mRNA followed by the amplifcation of *puf*M genes as described in Lehours *et al*. (2010).

* Limitation factors of AAP bacteria (IR microscopy)

To identify the factors limiting heterotrophic bacterial production and cell growth of AAP bacteria and total prokaryotes, on board enrichments were conducted. Selected surface seawater samples (3–5m depth) were collected and dispensed into acid-washed transparent polycarbonate flasks (250 ml, Nalgene). Nutrients were added to unfiltered seawater samples in order to obtain a final concentration of 1μMNH4Cl + 1μMNaNO3 (N), 0.25μMNa2HPO4 (P), and 10μM C-glucose (C). For these experiments, a series of five flasks (control, +P, +N, +C, +NPC) were incubated for 48 h under simulated in situ conditions, in on-deck incubators with running surface seawater and neutral density screens to mimic in situ 55% light conditions. After incubation, samples for determining the abundance and growth of AAP bacteria and total prokaryotes and for measuring bacterial production were processed as described below. Abundance of AAPB was measured by infra-red microscopy (Cottrell *et al*., 2006). The abundances of total heterotrophic prokaryotes were measured by flow cytometry according to Marie *et al*. (2002). The bacterial production was determined by [3H]-leucine incorporation as described by Van Wambeke *et al*. (2010). Results areexpressed relative to the unamended controls.

# Stratégie d'échantillonnage /

#

Rosette sampling

# Décrire quels types de données sont nécessaires pour vous compléter votre propre jeu de données **avant** envoi à la base de données, et estimer le délai avant la disponibilité de vos données pour la base de données /

#  *Post-cruise data analysis/treatment required, and the time frame for this*

Disponible

# Estimations des erreurs, précision, sensibilité des données /

#  *Error estimates, precision and accuracy of the data*

……………

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| FICHIERS  | *FILES* |

# Nom de fichier de données */*

#  *File name*

AAPB limitation factors (558) pour database BOUM.xlsx

Données Diversité AAPB (559) pour database BOUM.xlsx

# Explication des têtes de colonne, des unités et des abréviations utilisées dans le fichier de données /

#  *Data file structure, units, label columns, …*

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| RESULTATS PRELIMINAIRES  | *RESULTS* |

Lamy, D., C. Jeanthon, M.T. Cottrell, D. L. Kirchman F. Van Wambeke, J. Ras, O. Dahan, M. Pujo-Pay, L. Oriol, L. Bariat, P. Catala, V. Cornet-Barthaux& P. Lebaron. **2011.** Ecology of aerobic anoxygenic phototrophic bacteria along an oligotrophic gradient in the Mediterranean Sea. **Biogeosciences** 8:973-985.

Jeanthon, C., Boeuf, D., Dahan, O., Le Gall, F., Garczarek, L., Bendif, E. M., and Lehours, A.-C. **2011.** Diversity of cultivated and metabolically active aerobic anoxygenic phototrophic bacteria along an oligotrophic gradient in the Mediterranean Sea, **Biogeosciences** 8 :1955-1970.

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| REFERENCES BIBLIOGRAPHIQUES | *REFERENCES - PAPERS* |

Cottrell, M. T., Mannino, A., and Kirchman, D. L.: Aerobic anoxygenic phototrophic bacteria in the Mid-Atlantic Bight and the North Pacific Gyre, Appl. Environ. Microbiol., 72, 557–564, 2006.

Lehours, A.-C., Cottrell, M. T., Dahan, O., Kirchman, D. L., and Jeanthon, C.: Summer distribution and diversity of aerobic anoxygenic phototrophic bacteria in the Mediterranean Sea in relation to environmental variables, FEMS Microbiol. Ecol., 74, 397–409, 2010.

Marie, D., Simon, N., Guillou, L., Partensky, F., and Vaulot, D.: Flow cytometric analysis of marine picoplankton, in: Protocols in flow cytometry and cell sorting, edited by: Diamond, R. A. and De Maggio, S., Springer-Verlag, Berlin, Germany, 421–454, 2002.

VanWambeke, F., Christaki, U., Giannokourou, A., Moutin, T., and Souvemerzoglou, K.: Longitudinal and vertical trends of bacterial limitation by phosphorus and carbon in the Mediterranean Sea, Microb. Ecol., 43, 119–133, doi:10.1007/s00248-001-0038-4, 2002.