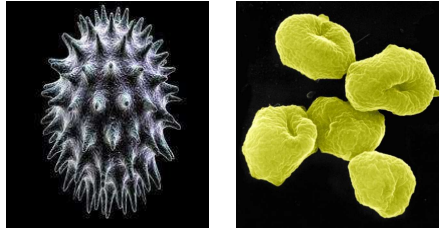


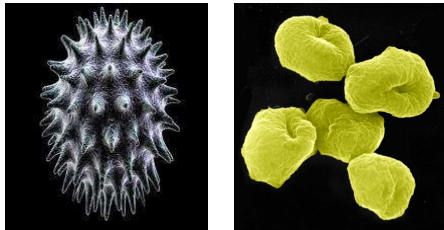
PANAM et Analyse des données

2 modèles biologiques : *Eucaryotes* unicellulaires et *Archaea*



PANAM et Analyse des données

2 modèles biologiques : *Eucaryotes* unicellulaires et *Archaea*



Profondeur de
séquençage



Phylogénie

- Enrichir les annotations
- Mettre en évidence une structuration particulière des communautés
- Caractériser les communautés complexes et / ou sous étudiées

NAS

Structure of the rare archaeal biosphere and seasonal dynamics of active ecotypes in surface coastal waters

Mylène Hugonj^{a,b,1}, Najwa Taïb^{a,b,1}, Didier Debroas^{a,b}, Isabelle Domaizon^c, Isabelle Jouan Dufourne^{a,b}, Gisèle Bronner^{a,b}, Ian Salter^{d,e}, Hélène Agogue^f, Isabelle Mary^{a,b,2}, and Pierre E. Galand^{d,g}

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environmental
microbiology

Environmental Microbiology (2012)



doi:10.1111/1462-292X

Short-term dynamics of diversity patterns: evidence of continual reassembly within lacustrine small eukaryotes

RESEARCH ARTICLE

Geographic distance and ecosystem size determine the distribution of smallest protists in lacustrine ecosystems

Cécile Lepère^{1,2,3}, Isabelle Domaizon³, Najwa Taïb^{1,2}, Jean-François Mangot^{1,2,3}, Gisèle Bronner^{1,2}, Delphine Boucher^{1,2}, & Didier Debroas^{1,2}

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Conclusions

ePANAM

- ◆ Approche phylogénétique
- ◆ Adapté à de grands jeux de données (pyrotags, MiSeq)
- ◆ Déployé sur un cluster de calcul
- ◆ Détection des clades
- ◆ Indices phylogénétiques

ePANAM
Depicting the microbial diversity from high-throughput amplicons

Home • New Analysis • About • FAQ • Contact • Register • Login

version 1.0 | last modified : Sept, 0th 2013 | admin : panam_AT_univ-bpclermont.fr

HOME

ePANAM is a web server dedicated to the Phylogenetic Analysis of next generation Amplicons (Protists, Fungi, bacteria and Archaea). It enables an in-depth analysis of microbial ecology by processing SSU 16S and 18S rDNA raw sequences obtained via 454 pyrosequencing by:

- Processing single or multiplexed samples
- Controlling the quality of raw reads
- Computing operational taxonomic units
- Displaying richness and evenness indexes
- Building phylogenies and delineating environmental clades
- Describing taxonomic composition within and between samples

Input form

How to fill query form

- In the input form you can upload your files containing **raw sequences** (fasta), **quality scores** (qual) and **barcodes**; and seize settings for your analysis.
- Processing raw reads requires cutoffs for the minimal length and the minimal quality scores below which the reads are retrieved; the primers sequences and a mismatch value to allow on the reads and the barcodes file to sort the reads according to their sample.
- The amplicon length field relies on the theoretical length of amplicons.
- The reads may belong to one or more domains that have to be specified.
- For OTUs computing, the user should set a cutoff clustering, and can choose to cluster all samples together in order to set a taxonomic comparison, or to cluster samples separately.
- Analysis can be performed for both a non normalized and a normalized size libraries allowing for a samples comparison.

All the parameters set by the user are summarized in the overview page.

RESULTS

The results on ePANAM are displayed under three labels:

Alpha-diversity:
Describes diversity within each sample by computing richness and evenness indexes.

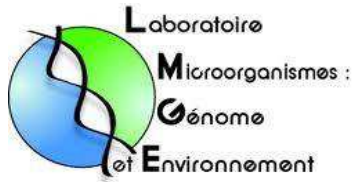
Sample's alpha diversity results

Beta-diversity:
Measures the diversity shared among samples. It is processed when allSamples analysis is checked.

Beta diversity results

Taxonomy:
Displays the taxonomic composition in terms of sequences, OTUs and clades among the samples.

Taxonomy results



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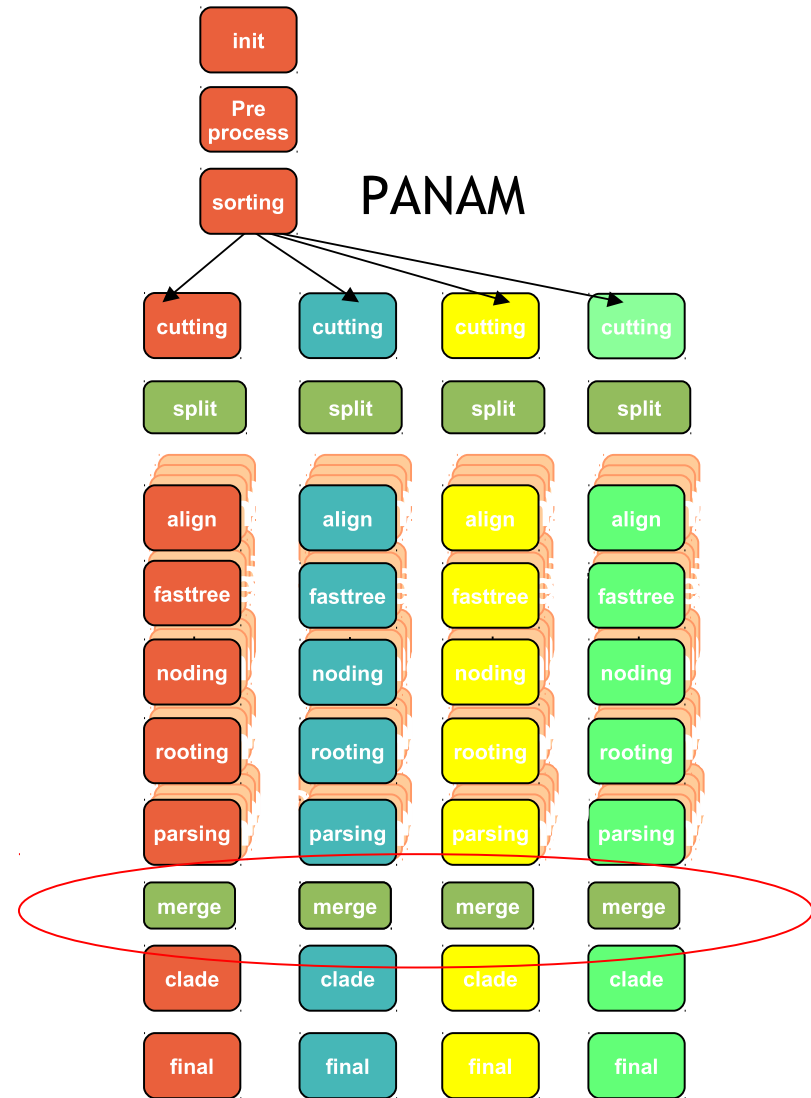
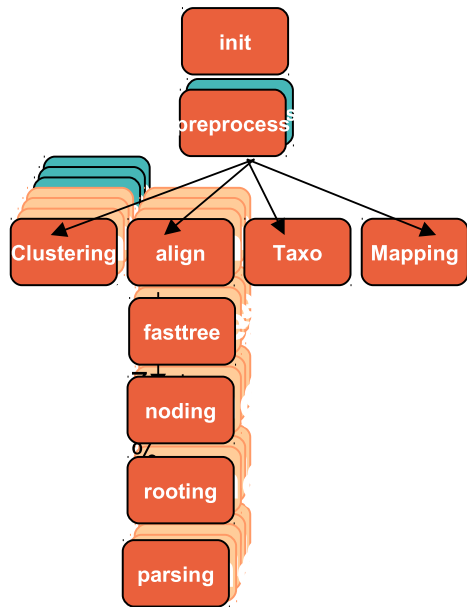
Hélène Agogué



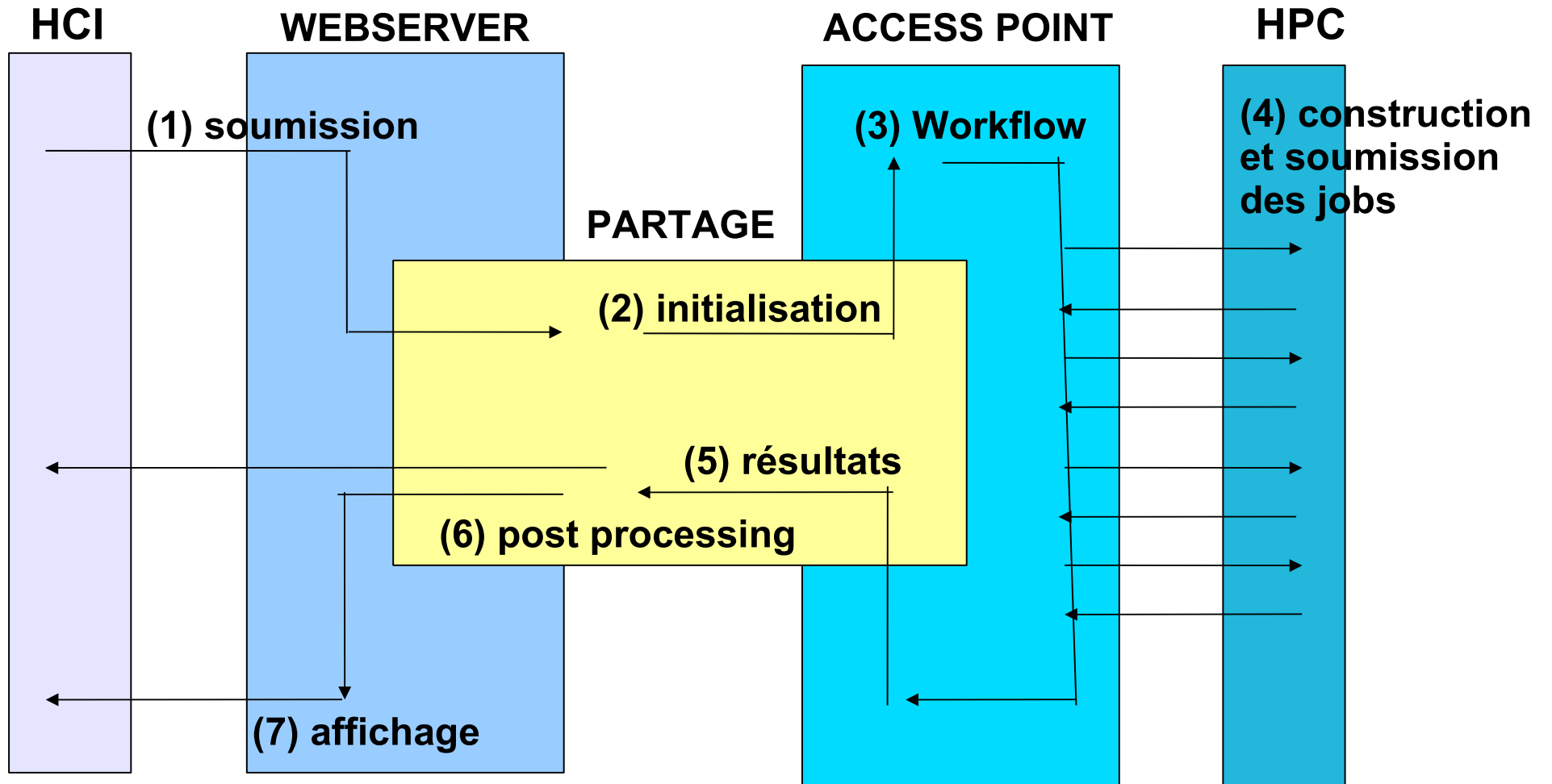
Antoine Mahul



Parallélisation des calculs



Architecture de ePANAM



Importance de la biodiversité microbienne

Primordiale dans le fonctionnement des écosystèmes

- Cycle du carbone, de l'azote...

Exploitée par l'homme

- Alimentation
- Médecine
- Production industrielle

Nouvelles perspectives dans un contexte de développement durable

- Recyclage de déchets biologiques
- Dépollution de sites industriels
- Biocarburants

Etude de la biodiversité dans le temps et l'espace

- Distribution en fonction des conditions du milieu
 - Comportement des communautés en réponse à des perturbations
- Arguments pour la mise en place de politiques adaptés

