Utilisation de Geocluster sur la grille, 2 exemples
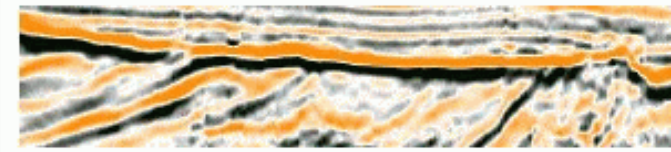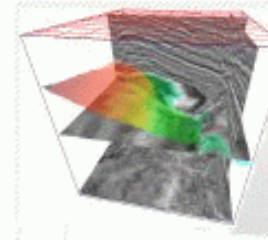
Traitement marine

Marie OUSSOU et Pierre-Yves GALIBERT
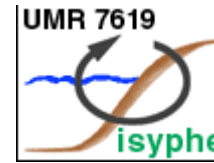
- Imagerie de l'Albien dans le Golfe de Guinée
    Extraction d'attributs sismiques 3D
    Sismogrammes synthétiques
    Traitement marine 2D (SI 2ms/ RL 10s, C90)

- Séquence de référence:
    FKMUL + DMO + FXMIG

- Amélioration:
    SRME + Migration temps avant sommation
    avec pointé RMO   VDMUL + LASUB + RAMUR +TIKIM

Attributs sismique 3D

Bloc A
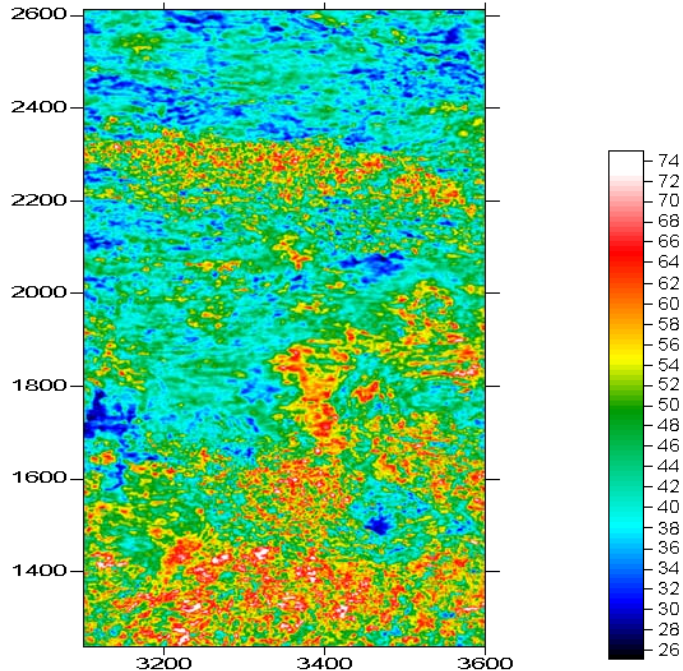
Bloc B
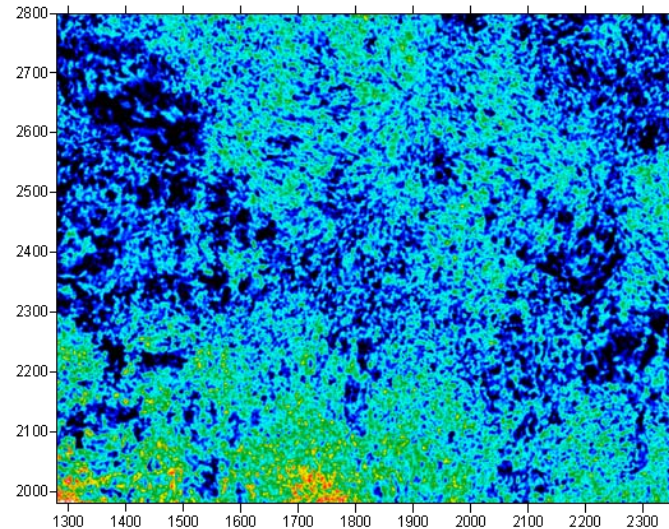
Bande passante statistique (Hz)

Caractérisation des discontinuités dans l'Albien   MQC1V
- Attributs spectraux
- Mesures de discontinuité

Retraitement TIKIM

FKMUL + DMO +FXMIG

SRME + TIKIM

Statistiques d'utilisation du projet PETROCI

During the period between 01 January 2007 and 28 April 2009

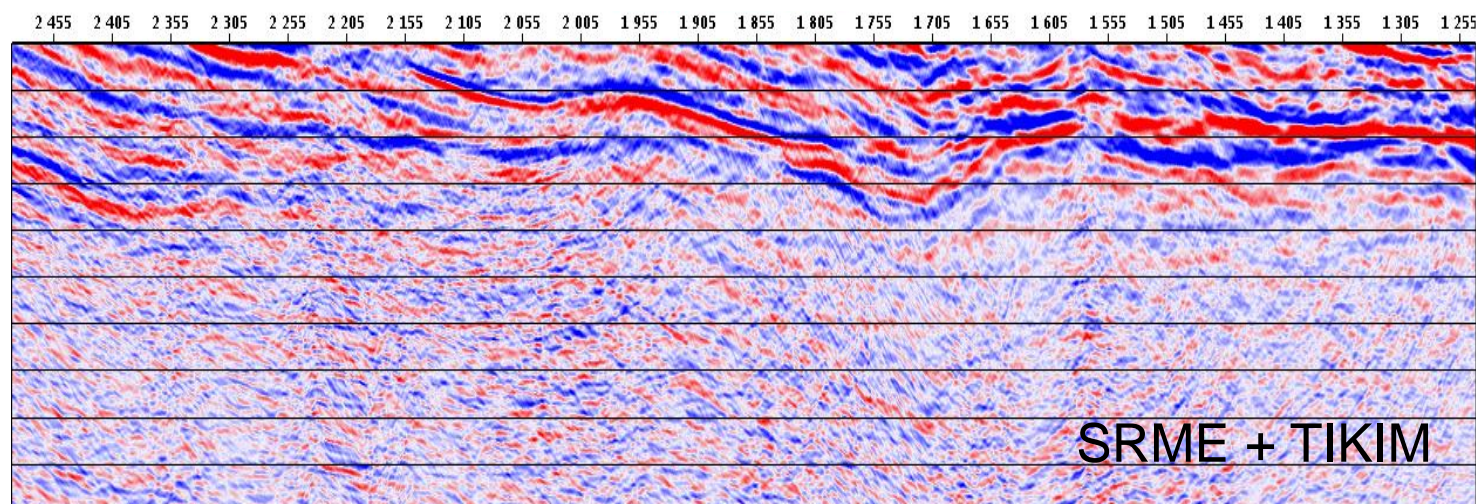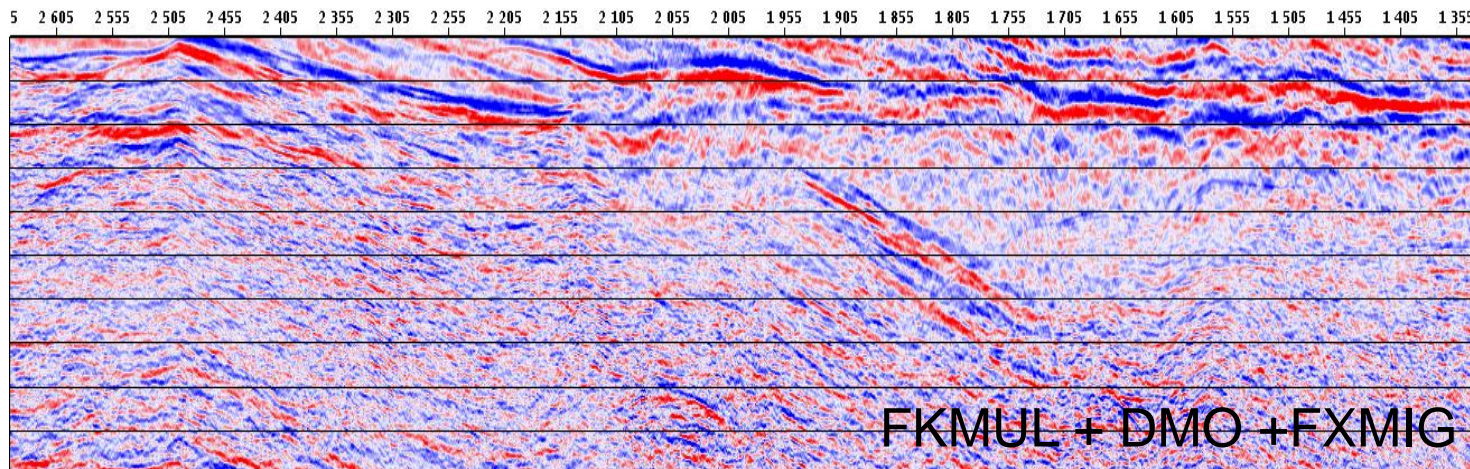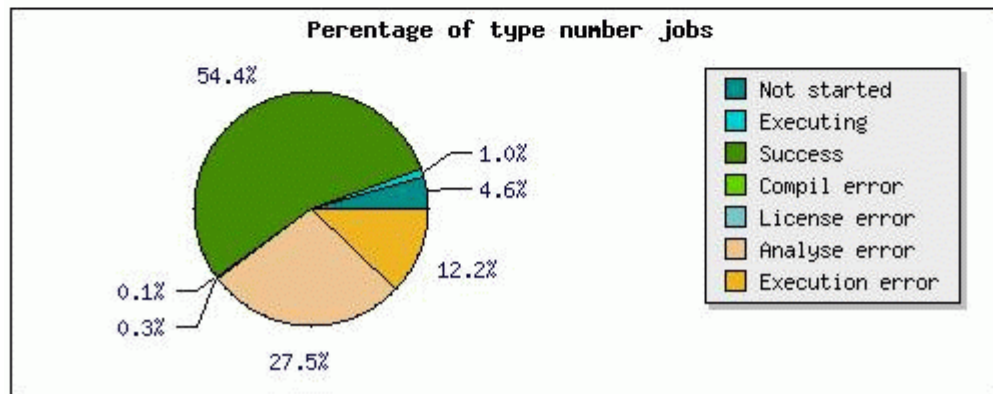| Total jobs	Total Elapse (HH:MM:SS)
1009	616:43:13

Summary

Type	Number of Jobs	Elapse (HH:MM:SS)
Not started	46	00:00:00
Executing	10	399:37:14
Success	549	197:21:18
Compil error	1	00:00:00
License error	3	00:00:08
Analyse error	277	00:02:39
Execution error	123	19:41:53

Perentage of type number jobs

54.4%
1.0%
4.6%
12.2%
0.1%
0.3%
27.5%

- Not started
- Executing
- Success
- Compil error
- License error
- Analyse error
- Execution error

Travail entier sur l'UI2
Au départ 16 Gb de données

Au final 200 Gb de projet
Et sauvegardes sur l'UI2

UPMC
PARISUNIVERSITAS

UMR 7619
isyphe
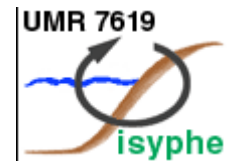
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Organisation du traitement à Sisyphe :

- Utilisation sur la grille via UI2 CGGVeritas à Massy.
- TEAMVIEW en local sous Windows XP (et MacOSX…)
- Jobs batch codés en GSL (ni XJOB, ni JXJOB)
- Interactifs: Kereon, Chronovista, Teamview

- Quelques difficultés rencontrées :
  Gestion librairies: *read ne marche pas tel que,
  utiliser XPS ou ajouter inDATA
  Remise fichiers résultats parfois erratique (?)
  Pas de licence par moment, problèmes certificats, réseau, …
  Suivi des exécutions peu commode
  (besoin d'une interface job manager ?)
  UI2 ne passait pas TIKIM sur ligne 2D complète en un seul job
  OK en // sur les nœuds en plusieurs jobs

**Marine geophysics in the Geol Lab, geodynamics team:**

    - Episodic cruises, episodic processing needs.

    - Basic seismic processing lessons for students using CGG software.

    - Long periods without activity, as marine geophysics is a component amongst
wider topics in geodynamics.

    - Software used before Geocluster/EGEODE: Geovector 6100! Updates are time
consuming for researchers when compared to the episodic use. As a result
we cannot follow state of the art processing methods.

Problems solved by Geocluster & EGEODE VO in such an environment:

    - Updates are progressive through the CGGVeritas servers. Stability of the UI platform.

    - No need to invest in a Cluster for just an episodic use. The laboratory can just share
a few nodes on the grid 24/7 and use this shared capacity in a short time on more nodes
when needed.

    - New tools (Teamview, Chronovista...), Pre-stack time migration now possible.

APPLICATION 1: SUB-BASALT IMAGING

Reprocessing up to 13s TWTT gave good results on another profile (not shown here) Published in EPSL.
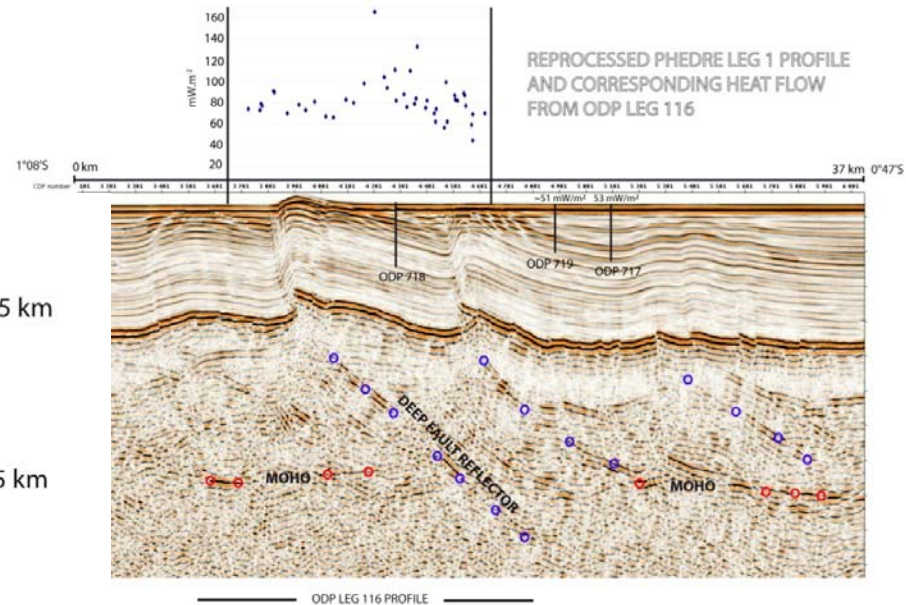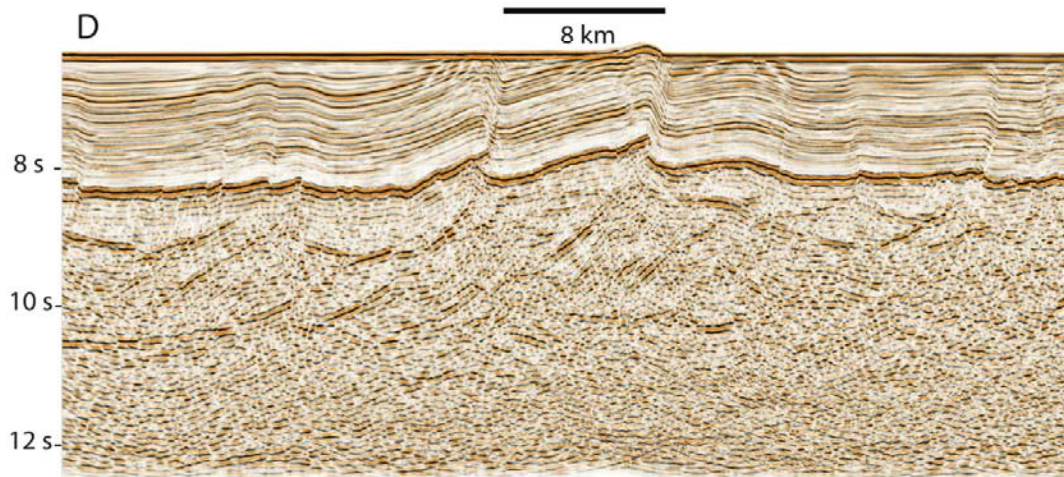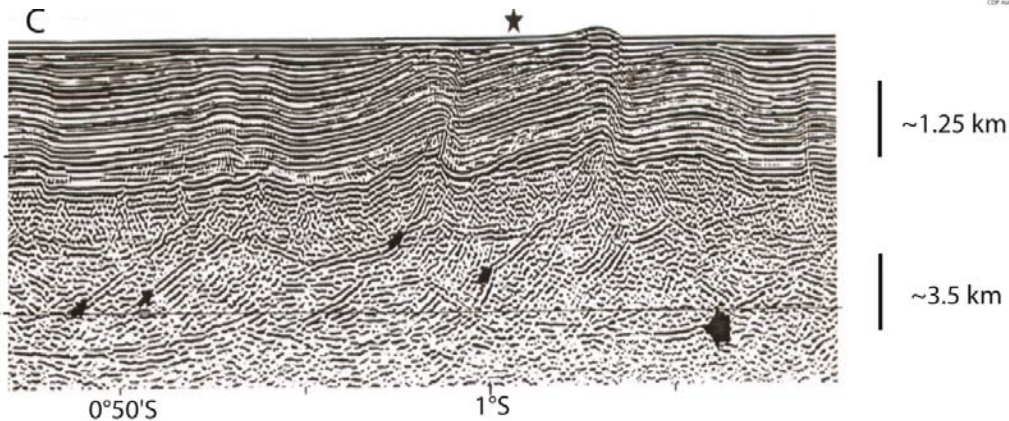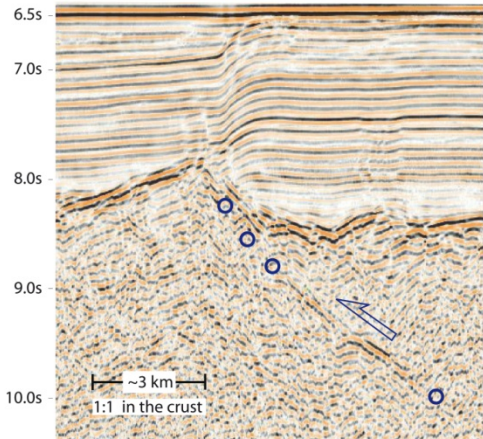

Delescluse & Chamot-Rooke, 2008

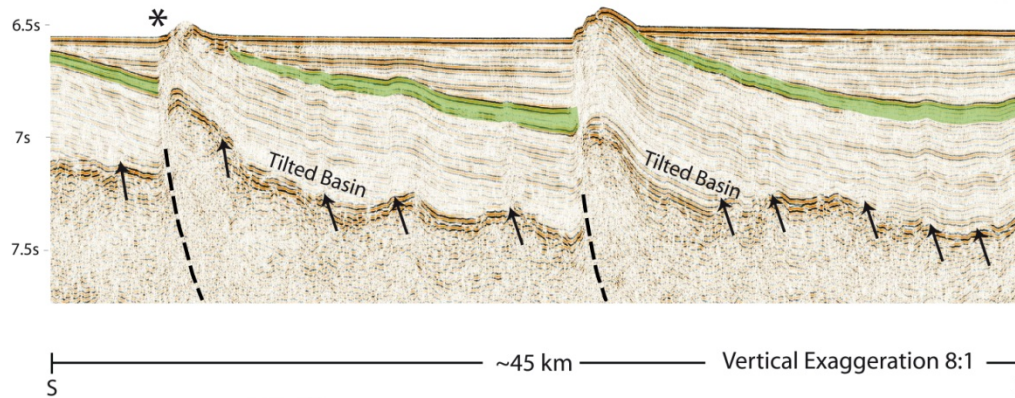**Reprocessing of low frequency seismics:**

> 1) Original processing in 1991-1993
> 2) TIKIM Pre-stack migration (with stack velocity by lack of time)
> 3) Post-stack Kirchhoff migration (Geovecteur 6100)+ TEAMVIEW

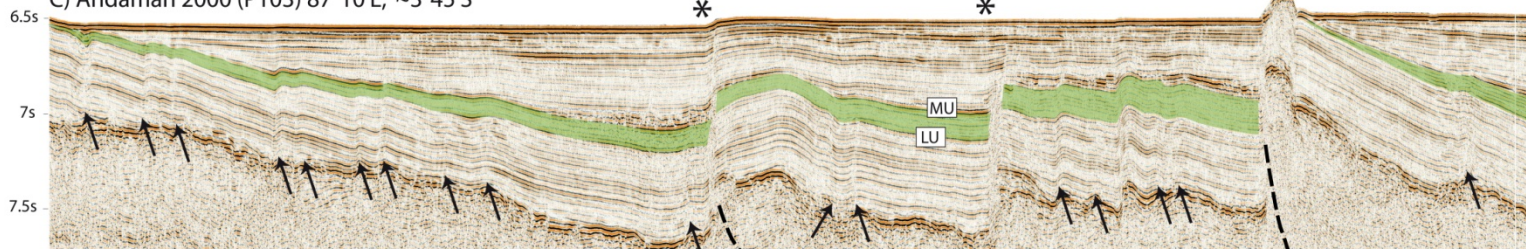CGGVERITAS

APPLICATION 2: HIGH-RESOLUTION SEISMICS
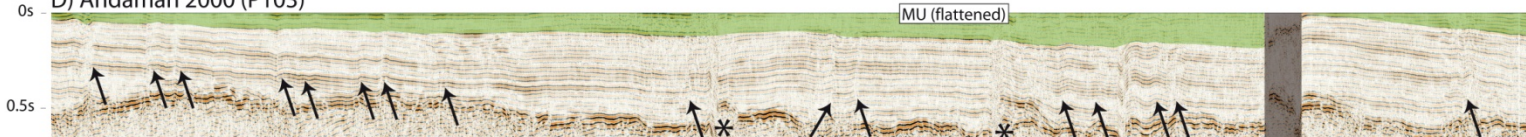

A) Phèdre (Leg 1) 81°30'E, 1°45'S

~3 km
1:1 in the crust

B) Andaman 2000 (P102) 87°E, ~3°40'S

Tilted Basin   Tilted Basin

~45 km   Vertical Exaggeration 8:1
S   N

C) Andaman 2000 (P103) 87°10'E, ~3°45'S

MU
LU

D) Andaman 2000 (P103)

MU (flattened)

Typical processing Flow (post-stack):

-Resampling,
-band pass filter

-Trace and shot editing

--Semblance

-Velocity picking
-NMO

--Mutes
-(anti stretch,
-internal,...)

--Stack

--Migration

-Postprocessing
-(AGC ...)

M. Delescluse et al. 2008

6 traces seismics processed on Geovecteur 6100 displayed TEAMVIEW
Horizon picking with TEAMVIEW, « flattening » (D) with Geocluster

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Statistiques d'utilisation du projet : ENS

During the period between 01 January 2007 and 29 April 2009

Total jobs	Total Elapse (HH:MM:SS)
166	16:42:42

Summary

Type	Number of Jobs	Elapse (HH:MM:SS)
Not started	40	00:00:00
Success	51	13:38:37
Analyse error	29	00:01:20
Execution error	46	03:02:44

Perentage of type number jobs

30.7%   24.1%

- Not started
- Success
- Analyse error
- Execution error

17.5%   27.7%
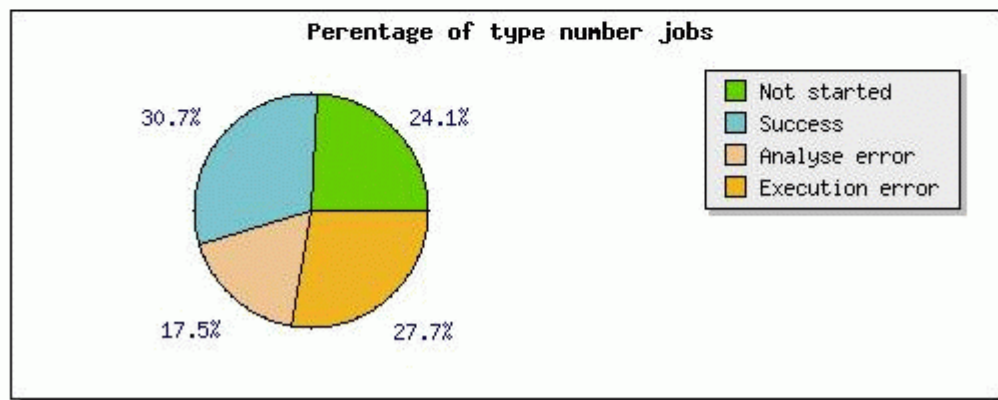
Installation d'une UI

Travail sur l'UI phonolite
Et en // sur le site CGGVeritas

Premier traitement avec
Geovecteur 6100 sur SUN

Reprise du traitement et
séquences de migration
sur la grille

CGGVERITAS

CGGVeritas is the world's leading international pure-play geophysical company delivering a wide range of technologies, services and equipment to its broad base of customers mainly throughout the global oil and gas industry

Focused on Performance . Passion for Innovation . Powered by People . Delivered with Integrity
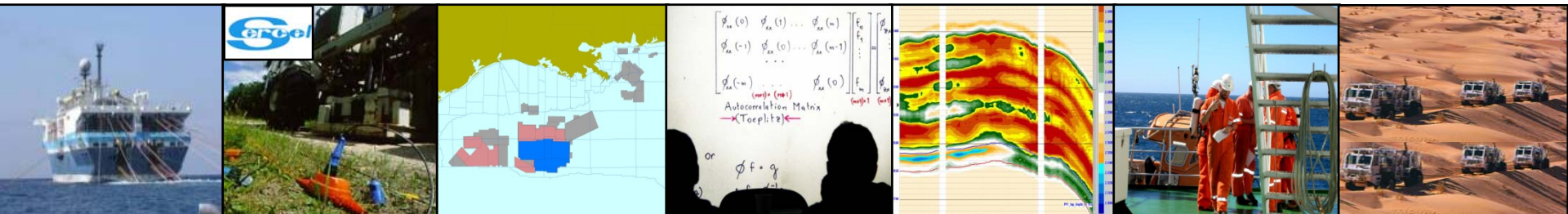
We look forward, as CGGVeritas, to serving you in the future.

CGGVERITAS