Editorial

"Welcome to the new website of SEISQUARE, registered trademark of ERM.S Group"

Firstly, please allow me to ask a question to all oil geoscientists entering this site : "How confident are you with your oil reservoir model ?"

The increasing value of oil resources and their exploration costs make more and more crucial, that you be confident in your earth decision making processes. We know that confidence cannot be bought, however, SEISQUARE services and software contribute earnestly, by providing geophysicists with reliable confidence intervals on their data and their interpretations built for reservoir engineers.

At the time of deciding on a new well implementation or on the oil content of a reservoir, more and more oil companies now ask and rely on SEISQUARE services to get confident on :

* *the quality of the seismic processing ,*
* *the validity of the depth conversion,*
* *the reliability of the seismic attributes used for reservoir characterization or monitoring.*

There is no magic behind it, only probability models specially designed and fully mastered for quantification of uncertainties geophysicists face in their everyday work ! That is where our skills are and we are proud to say that we are a definite leader in this field.

There was a time when it was nice to have some statistics added to a job, now it is becoming a MUST, to add SEISQUARE conclusions to it.

SEISQUARE services are available in :

* *AVON and PAU (France)*
* *STAVANGER (Norway)*
* *RIO (Brasil)*

And we open new job profiles for opening the next ones.

For those of you who wish to run the geostatistical analysis yourselves, we provide a full suite of software dedicated to specific geophysical works:

* *V_SQUARE helps you control the quality of any seismic velocity field, and remove remaining processing artefacts using spatial filters.*

* *GEODTECT provides fast, automatic segmentation and labelling of any seismic cube thank to the mathematical morphology algorithm involved.*

But let's go back to the question: "how confident are you with your oil reservoir model?". I am sure SEISQUARE has got the answer! Now just ask for it."

Luc Sandjivy, Chief Executive

CUSTOMERS' NEWS

Andra (National radioactive waste management agency) required SeisQuaRe services for spatial processing of seismic amplitudes.

At the request of Wintershall Noordzee, SeisQuaRe Norge is fully involved in a current 3D seismic processing in the Danish and German sectors of the North Sea Central Graben.

"The objective is to ensure that the velocity model built by the contractor, either by semi-manual and semi-automatic picking or fully automatic picking, is spatially meaningful and plausible from both Geological and Geostatistical standpoints. For various velocity fields generated during the project, quality checking will be carried out to ensure that the spatial anomalous picks are identified. They will be reviewed with the contractor and if needed corrected before the project move headways forward". **Yann Montico, Geophysicist**
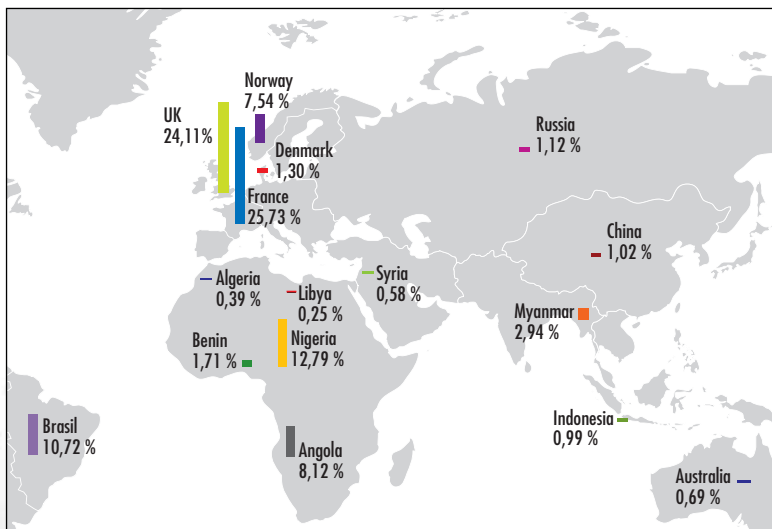
SeisQuaRe Norge has been awarded a project to provide a Spatial Quality Check and Filtering of stacking velocities for Time to Depth Conversion purposes in a License in Norway.

ConocoPhillips Norge has contracted SeisQuaRe Norge to carry out a regional velocity model building project.

SeisQuaRe services Activity
July - September 2007

Norway 7,54 %
UK 24,11%
Denmark 1,30 %
France 25,73 %
Russia 1,12 %
China 1,02 %
Algeria 0,39 %
Syria 0,58 %
Libya 0,25 %
Myanmar 2,94 %
Benin 1,71 %
Nigeria 12,79 %
Brasil 10,72 %
Angola 8,12 %
Indonesia 0,99 %
Australia 0,69 %

Next issue coming in January : quizz on geostatistics for geophysicists, new V_SQuaRe release, Focus on the management of uncertainties in the Oil&Gas Industry.

NEW FACES

Welcome to Emmanuelle, Clémentine, Hélène, Patxi, Guillaume and Patxi

Emmanuelle Capdevielle

started in September 2007 as a Software Analyst Programmer. She graduated from L'Université de Pau. She is based in SeisQuaRe Pau.

Clémentine Ermenault

joined SeisQuaRe Pau in October 2007 as a Junior Consultant, after a 6 months internship. She graduated from l'Université Pierre et Marie Curie (IPGP Paris).

Hélène Binet

started in September 2007 as a Junior consultant. She holds a MSc degree in Geophysics from L'Université Paris VI.

Patxi Gascue

joined SeisQuaRe Pau in September 2007 as a Software Technical Support, after his internship. He graduated from l'Université de Pau.

Guillaume Mathieu

joins SeisQuaRe, for a one year internship, as a Junior Consultant (Nancy School of Geology).

Patxi Lahetjuzan

joined SeisQuaRe Norge in October 2007 as a Junior Consultant, after a 6 months internship. He graduated from L'Université de Pau.

Vacancies

We are currently expanding and looking for qualified Geoscientists to become SeisQuaRe consultants in geostatistics applied to the following major fields :
- seismic processing
- time to depth conversion
- 4D monitoring

Applications and questions can be addressed to
jobs@seisquare.com

Conferences

- **10th International Congress of the Brazilian Geophysical Society :**
  19-22 November 2007
  SeisQuaRe, booth # 6
  Contact : Catherine

- **Biennial Geophysical Seminar :**
  10-12 March 2008

- **70th EAGE Conference & Exhibition :**
  9-12 June 2008
  SeisQuaRe, booth # 7070

THE NEW SITE
www.seisquare.com

NEWS SeisQuaRe

SeisQuaRe do Brasil, along with the Department of Computing at Natal University (DIMAP – UFRN), entered into a research and development project on the parallel computing of geostatistical processing. The project aims to enable optimisation of SeisQuaRe spatial analysis capabilities for dense velocity fields and amplitude cubes. Thanks to this project, SeisQuaRe commits to pursuing its search for the most advanced geostatistical tools, by keeping technological innovation at the core of its priorities.

Braulio Bezerra, student in Computing Engineering, will be in charge of the project until December 2008.

SeisQuaRe adopts Macrovision FLEXlm license Management for V_SQuaRe Suite

The new licensing method simplifies the activation of different features when users upgrade or purchase new products. It is particularly useful for corporate customers who need to monitor licenses, install on a network, and upgrade some or all product licenses.

SeisQuaRe adds Citrix platform

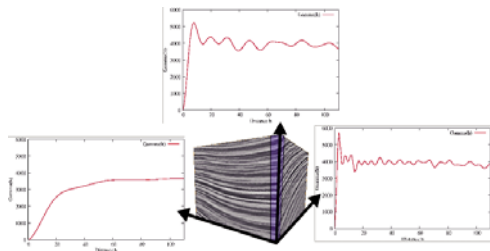The new release 2.3 R112 gives our customers the ability to use V_SQuaRe on Citrix platform.
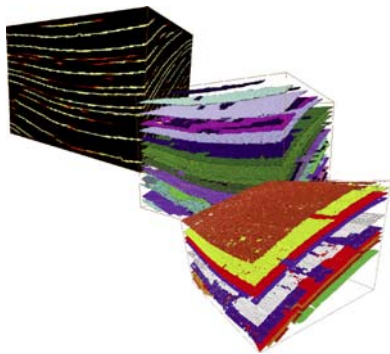
Fig 1: original seismic cube and related variograms

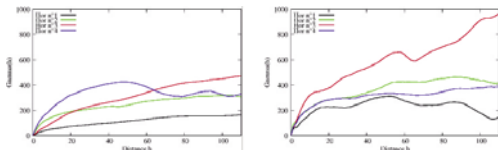*Fig 2: Some of segmentations steps.*

Fig 3: structural consistent variograms

NEW HEAD OFFICE
and Inauguration

ERM.S Group Head Office moved to a new location in 2007. Our new address is now as follows : ERM.S Group/SeisQuaRe 30 avenue du Général de Gaulle 77210 AVON.

An official inauguration will be held on Thursday, December 6.

Further details will be provided soon.

FOCUS ON TECHNOLOGY

Experience SeisQuaRe solutions for fast, automatic segmentation and labelling of seismic cubes.

CHALLENGE

- Providing a fast and automatic a priori 3D segmentation before seismic interpretation
- Removal of dipping effect in 3D amplitude variography

SeisQuaRe SOLUTIONS

- Extraction of main geological structures by image processing techniques (mathematical morphology among others)
- Computation of variograms along structural components

SeisQuaRe BENEFIT

- Reliable dip-steered kriging input
- Automated process

METHOD FOR HIERARCHICAL DETERMINATION OF COHERENT EVENTS IN A SEISMIC IMAGE Patented by ERM.S Group (Number FR2884636)

EXPERIENCE GEODTECT

The segmentation and labelling tools are available as plug-in software for OpendTect. GeodTect uses the OpendTect interface but the main processing is done through algorithms based in the image processing library developed by ADCIS, namely Aphelion.

CASE STUDY

Structural variography of seismic cubes using morphological segmentation (Petroleum Geostatistics, EAGE Cascais 2007)

Computing variograms on 3D seismic amplitudes or related attributes must deal with structural dipping. Vertical variograms are always useful to compute, as they correspond to the main processing direction (trace signal processing), whereas usual horizontal variograms prove ineffective most of the time as they reflect the structural dipping much more than the horizon consistent amplitude variations.

A number of computing strategies have then been developed to tackle this problem such as horizontalisation from a key horizon, use of dip azimuth cube … and of course they all require a priori input of the structural features of the amplitude cube to guide the variogram computation.

Mathematical morphology has been successfully applied to seismic cubes to provide an automatic a priori 3D segmentation that may be directly input into the variogram computation.

Zébra Moret-sur-Loing - Tél. 01 60 70 14 03

SEISQUARE®

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