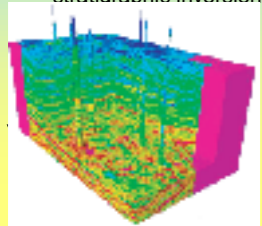


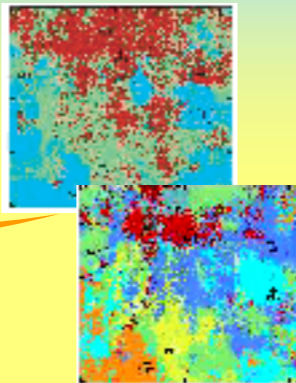
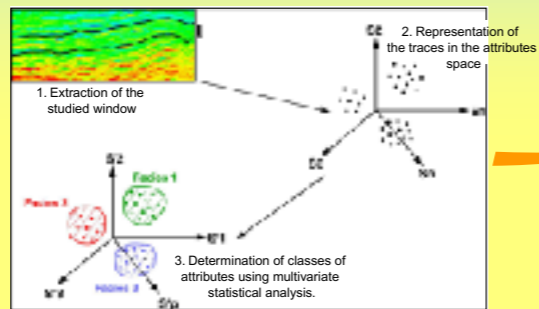
2 Qualitative interpretation of seismic attributes

Main principles

Impedance cube from post stack stratigraphic inversion

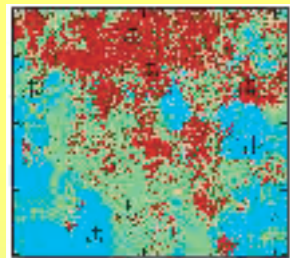


Segmentation techniques:
Each class corresponds to a typical seismic answer at the reservoir level: "seismic facies"

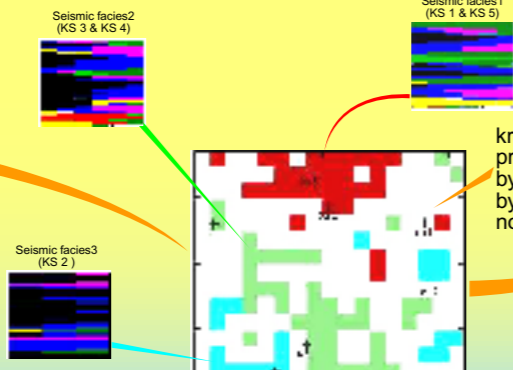


Transformation of the studied window into a map of seismic facies, related to specific reservoir characteristics, such as high versus low porosities, high sand/shale ratio...

Use of seismic facies map to compute the 3D grid of proportions

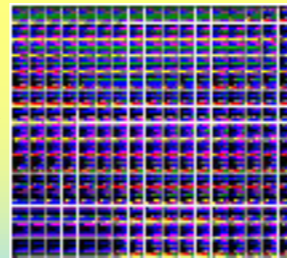


(a) Map of seismic facies resulting from a segmentation in 3 classes from the amplitudes. Each pixel corresponds to a portion of seismic trace in the studied window.



A seismic facies is associated to a vertical proportion curve computed from the wells belonging to its class

kriging of the proportions layer by layer and facies by facies in the non informed cells



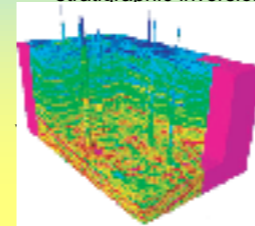
Resulting 3D Grid of Proportions

(b) Resampling of the map of seismic facies on the proportion grid.
In each cell:
1/ We keep only the traces with a high probability of a good classification.
2/ When a seismic facies is present above a chosen percentage, it is assigned to the cell.

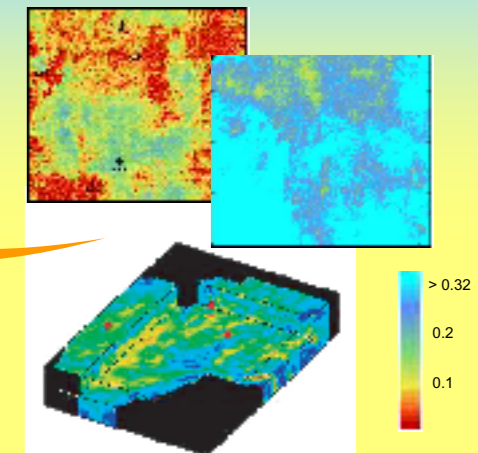
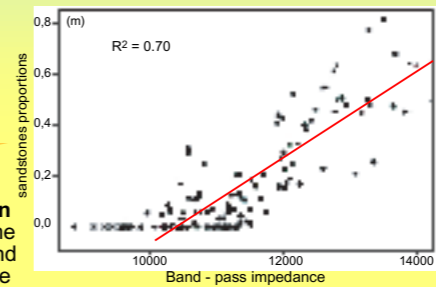
3 Quantitative interpretation of seismic attributes

Main principles

Impedance cube from post stack stratigraphic inversion

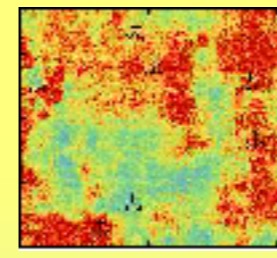


Statistical calibration function between some seismic parameters and the proportions of the different facies

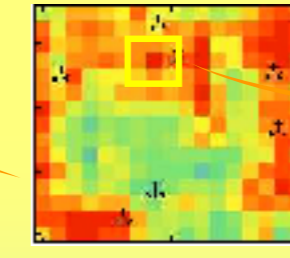


Transformation of the studied window into maps or cube of local average of sandstones proportions, or N/G, or...

Use of seismic facies map to compute the 3D grid of proportions

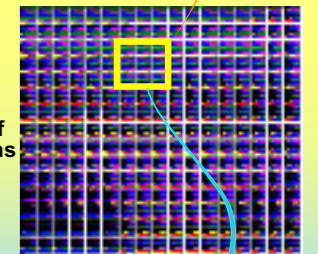


(a) Map of mean proportions computed from seismic

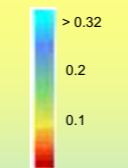


(b) Resampling (averaging) of the map of mean proportions on the proportion grid

For each cell: the cumulated proportion of sandstones computed on all the layers = value given by the seismic map



Resulting 3D Grid of Proportions



Barriers

For each cell: the cumulated proportion of barriers computed on all the layers = value given by the seismic map