Using the Virtual Seismic Atlas to Aid Interpretation of Deepwater Fold-Thrust Belts

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Interpretation of seismic data is often subjective and multiple interpretations of the same data are possible, leading to uncertainties in the final product. This problem is compounded by many existing seismic atlases that emphasise single interpretations. Furthermore, the seismic data in the public domain are often difficult to locate when looking for analogues. In some cases, these issues can be addressed by peer-review but, with the increasing demands on experienced geoscientists, this can be hard to achieve. The Virtual Seismic Atlas (VSA; www.seismicatlas.org) offers a solution by serving both as a resource for analogues and as an interactive workbook. The VSA is a freely accessible online image gallery that captures and shares seismic data, providing a platform for finding examples and analogues, and for comparing interpretation strategies and experience. Anyone can gain immediate benefit in the form of interpretational aid by browsing the gallery for analogues, or by uploading images for feed-back, peer-reviews and competitive interpretations, enabling a virtual discussion of the data.

The number of interpretations that can exist on the VSA is unlimited, which means that it is an ideal platform for investigating interpretational ranges. For example, the VSA has a significant coverage of deepwater fold-and-thrust belts, including examples from CGGVeritas' multiclient surveys from deepwater Nigeria. Investigating multiple interpretations is important for deepwater fold-thrust structures where an array of kinematic models have been used. An example is provided in this presentation. Before the conference, the participants are encouraged to produce their own interpretation of a seismic line extracted from the Nigeria dataset, with the aim of demonstrating the uncertainties and variations in the interpretations and to stimulate debate on interpretation strategies. A similar exercise was performed for the AAPG Hedberg meeting in Pisa in 2009; the results will also be presented at this meeting.

The VSA continues to host open interpretation exercises during and after the meeting. The high-resolution images are downloadable from the VSA: type 'New Orleans' in the search box.

Submission of content (incl. interpretations of other existing images) can be achieved through the authors. The VSA is a partnership between academia and industry, funded by NERC and PESGB together with a consortium of companies (BG, BHPBilliton, Hess, Shell and StatoilHydro).