"Acceleware has developed the best wave propagators on the market and as a result we are able to generate better seismic models in less time... furthermore, the wave propagation videos we are able to create in AxWAVE are great communication and validation tools."

AxWAVE™
SEISMIC FORWARD MODELLING

acceleware®

Benefits

- 2D and 3D pseudo acoustic modelling
- Isotropic, VTI, and TTI media
- Unlimited acquisition geometry and topography
- Frequency optimized finite-difference grid
- Predefined and user specified source wavelets
- Highly efficient absorbing boundaries
- Optional free surface at the top boundary
- Accurately positioned source locations on finite-difference grid
- Variable density models

Hybrid Hardware Advantages

- Supports NVIDA Tesla GPUs and Intel Xeon Phi Coprocessors
- Increased compute speed
- Reduced power consumption
- Increased cluster density
- Improved price/performance

Customizable

- C API integrates into any workflow
- Focus on high-level geophysics
- Customizable for proprietary technology

Supported Systems

- OS - 64-bit Red Hat Enterprise Linux 6 and higher
- GPU hardware - NVIDIA K10, K20, K80, M40/M60
- CPU hardware - x86-64 compatible CPUs

Fast and Accurate Finite Difference Seismic Modelling

AxWAVE™ is a high performance finite-difference application used for the simulation of seismic wave propagation through the subsurface.

This application enables a fast and accurate simulation of 2D and 3D seismic energy in an acoustic medium. AxWAVE uses the same finite-difference two-way wave propagation engine that powers Acceleware's reverse time migration solution, AxRTM™, and is optimized for modern high performance computing platforms including NVIDIA GPUs, multicore CPUs and Intel Xeon Phi Coprocessors.

AxWAVE is typically used in seismic forward modelling applications to generate synthetic shot gathers over complicated subsurface structures. The wave propagation engine accurately models acoustic wave behaviour, so the resulting shot gathers contain direct arrivals, primaries, surface multiples, and interbed multiples.

Experience the Cloud

AxWAVE is now available in the cloud! Acceleware is keeping you one step ahead by providing high performance computing cloud access to run our seismic imaging software. Find out more at acceleware.com/cloud-access

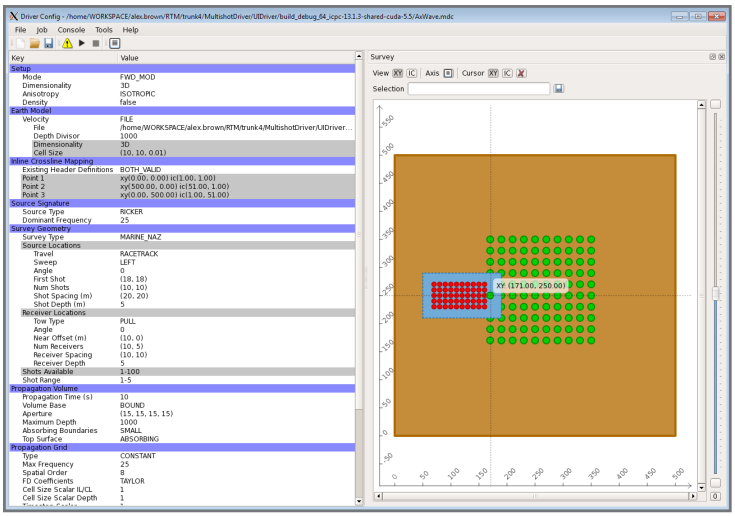
Easy to Use Interface

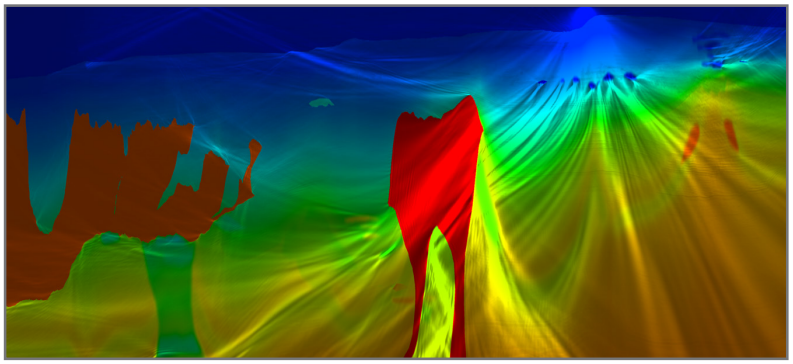
The easy-to-use interface includes a parameters window and a survey selection window. The survey selection window provides a visualization of the survey as it is being built. Users can also mouse over a shot to view the coordinates and highlight select shots to run separately. The parameters window provides users with a simple point and click solution to set the parameter specifications, upload velocity models and configure the survey geometry.

Applications of AxWAVE

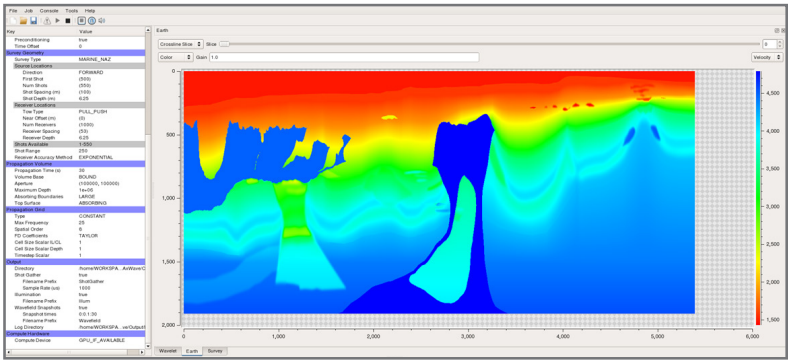
- Seismic Acquisition Survey Design
- Seismic Interpretation
- Seismic Processing

In **Seismic Acquisition Survey Design** seismic forward modelling reduces the risk in exploration by providing quantitative information for designing better 3D surveys. The forward modelling process can generate illumination maps to visualize the subsurface seismic energy distribution. For seismic survey designers, both the shot gathers and the illumination maps are useful for evaluating alternative seismic survey geometries and the target zone coverage in a proposed survey. Survey designers can then optimize acquisition geometry to improve the quality of their surveys.

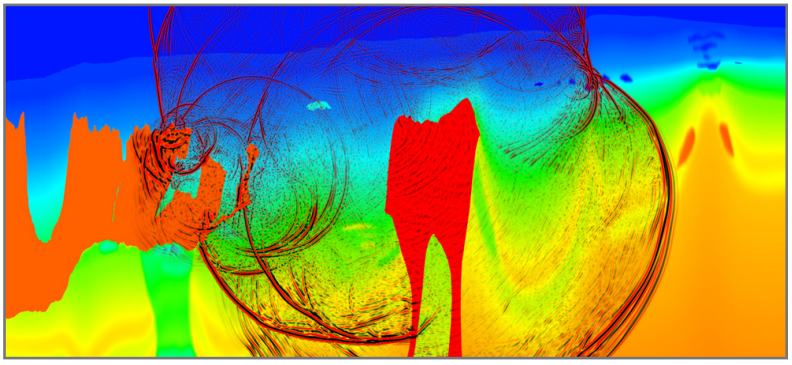




BP 2004 Dataset



With AxWAVE **Seismic Interpreters** can turn hypothetical geological models into synthetic shot gathers, and then compare the synthetic data to real acquisition data to gain insight into the geological area of interest. The model data can be used to check the validity of an interpretation, especially when investigating complex geological structural and stratigraphic plays.



BP 2004 Dataset

Processing benchmarking helps reduce **Seismic Processing** and imaging costs. Processors can generate seismic models and test different processing algorithms and flows. Seismic Modelling is very useful when calibrating migration methods. AxWAVE can be used to generate videos of wave propagation in the subsurface helping geophysicists refine processing techniques.

Learn More About AxWAVE™

Contact us today to discuss the benefits and applications of AxWAVE.
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