

PROGRAMMES

global tectonics programme

RATIONALISE THE GLOBAL IMPLICATIONS
OF REGIONAL PLATE MODELS

UNDERSTAND THE TECTONIC FRAMEWORK
THAT UNDERPINS EXPLORATION

JOIN A NETWORK OF RESEARCHERS PUSHING
THE BOUNDARIES OF PLATE MODELLING

BETTER UNDERSTAND THE GEOMETRIES OF SEDIMENTARY
BASINS AND THEIR TECTONIC HISTORY



GETECH

overview

This three year programme, one of GETECH's **Global Thematic Programmes**, comprises:

1 The structure and tectonics series

Mega-regional structural interpretations at 1:2 million scale based on GETECH's **Global Gravity and Magnetic Data** and other sources

New and unique regional plate models developed in a global plate modelling context

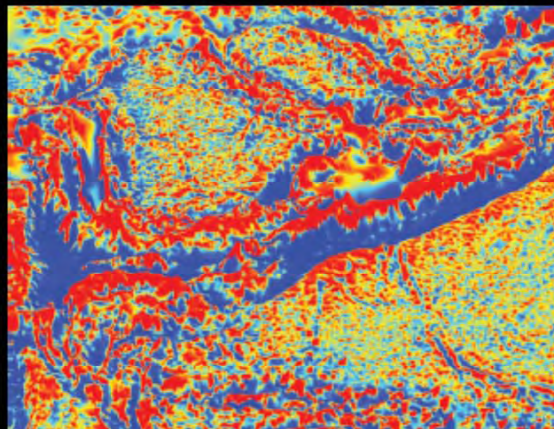
Presented in ArcGIS and hardcopy formats

2 GETECH's Global Plate Model

3 Research and development

4 Training, workshops and sponsor meetings

GETECH's **Global Tectonics Programme** will lead to a re-evaluation of the fundamental structural and tectonic framework that underpins oil and gas exploration. The primary aim is to maintain the value of detailed regional plate models whilst ensuring that the wider implications on global tectonics are considered.



The principal results will be new, detailed maps of the world's structural framework and a robust global plate tectonic model. GETECH is uniquely positioned to do this through the close collaboration of our structural geologists, plate modellers, remote sensing geologists and potential field geophysicists using the world's most extensive gravity and magnetic datasets.

GETECH's Global Plate Model v1.0 is the basis of the mapping in our **Atlases of Global Palaeogeography** which form part of our **Global Palaeogeography Programme**.

1 structure and tectonics series

Each study integrates two technical approaches:

Structural mapping: ground-truthing of current interpretations; new interpretations from remote sensing imagery and potential field data; 2D gravity and magnetic profile modelling to accurately identify the limit of unstretched continental plates.

Plate modelling: a new PaleoGIS plate tectonic model utilising the results of the structural mapping to quantify plate motions and constrain basin evolution.

Regions to date



Subsequent regions will be proposed and finalised in discussions with sponsors.

Each study comprises:

ArcGIS products

- Images of gravity data and Landsat Imagery
- Structural and tectonic elements
- Crustal type and extent
- Plate definitions
- Basin geometry
- Ocean age

Wallmaps

1:5 million scale wallmap.

Report

- Executive Summary
- Geophysical Interpretation Including 2D profile modelling
- Structural mapping
- Plate tectonic modelling
- Neotectonics
- Comprehensive bibliography

Plate model

In PaleoGIS, and GPlates formats

Animations

Powerpoint and .avi file formats

2 GETECH's global plate model

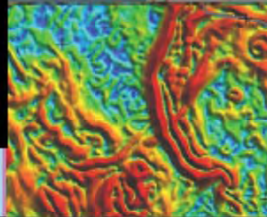
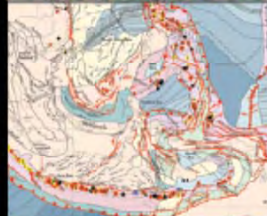
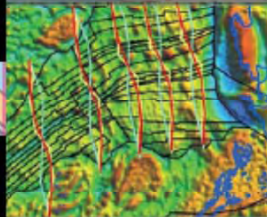
This new and unique global plate model forms the fundamental boundary conditions for our regional plate modelling work and is an integral part of our **Global Tectonics Programme**. It will undergo annual revisions based on new publications and plate modelling experiments, and delivered in a format compatible with PaleoGIS and GPlates software. The GETECH Global Plate Model v 1.0 has been utilised in our **Global Palaeogeography Programme**.



3 research and development

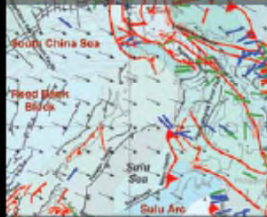
An ongoing research and development programme will enhance the results and methodologies utilised in the programme. Topics will be prioritised by sponsors and could include, but is not restricted to:

- Defining and understanding the ocean-continent transitional zone
- Deformable plates
- Dynamic topography and convection modelling
- Longevity of uplifts and significance for predicting source-to-sink relationships
- Global depth to basement: heatflow, crustal age and crustal thickness
- Intraplate motions: the role of minor plate margins
- Integration of plate and basin modelling techniques as exploration tools
- Rotation of raster data
- Convergence processes



5 training, workshops and sponsor meetings

Training courses and technical workshops are available to ensure clients gain full value from the programme. In addition annual sponsors meetings will be held in Houston and Leeds. These will provide a forum for discussion of methodologies, results and future work priorities.



PROGRAMMES

GETECH has commenced several **Global Thematic Programmes** which will: assist oil companies to reduce exploration risk; rank new and frontier areas for potential oil and gas exploration; and enhance the value of global portfolios.

GLOBAL GRAVITY AND MAGNETIC DATA

GLOBAL TECTONICS PROGRAMME

GLOBAL PALAEOGEOGRAPHY PROGRAMME

GLOBAL EARTH SYSTEMS MODELLING PROGRAMME

GLOBAL LANDSCAPE ANALYSIS PROGRAMME

GEODYNAMICS & PETROLEUM
GEOLOGY STUDIES

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