**THE STRATAGIS GIS -- Interactive Exploration in 2 and 3 Dimensions**

Larry Mayer\(^1\), Luciano Fonseca\(^2\), Mark Paton\(^1\), Pam McLeod\(^1\), and Martin Jakobsson\(^1\)

\(^1\)Center for Coastal and Ocean Mapping
\(^2\)Petrobras Research Centre, Rio de Janeiro, Brazil

Interactive Visualization Systems
Fredderick, New Brunswick, Canada

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**Introduction**

**STRATAGIS** was a multi-year, multi-investigator, interdisciplinary program funded by the Office of Naval Research and aimed at developing an improved understanding of the geologic processes that are responsible for the formation of the shelf and slope sediments over a continental scale. Much of the field work for this program was done on the highly subsurface, factually active, Gulf of Mexico margin of Northern California. Over the course of the five years of study of the Big River Margin, an immense database of core and acoustic data was collected. This database is available not only for its volume, but also for its diversity. Each of these datasets can be explored using the tools described in this paper.

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**Enhanced Functionality**

In order to overcome a number of limitations of the standard ArcView environment, we developed a series of Visual Basic applications that provided additional functionality to the GIS. These included buttons that would allow the user to view the results of queries on the ArcView dataset, etc.

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**From 2-D to 3-D**

**The 2-D GIS**

In order to explore the complex relationship between the various parameters stored as attributes in the GIS and the 3-D visual and subsurface morphology, we have developed a 3-D environment that allows interactive exploration. An application called "AnView" (Fonseca and Mayer, in press) has been developed that allows the direct import of ArcView projects or shape files into the Medusa interactive 3-D exploration software package. Once in Medusa, each layer can be loaded individually or collectively and explored interactively.

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**The WEB**

The STRATAGIS GIS is in the process of being made available to all interested parties. This site will be served by DigitalEarth and ArcIMS with an Oracle database backbone. The site will permit the interactive exploration of the entire GIS as well as downloading of all or parts of the database.

http://www.stratagis.unc.edu