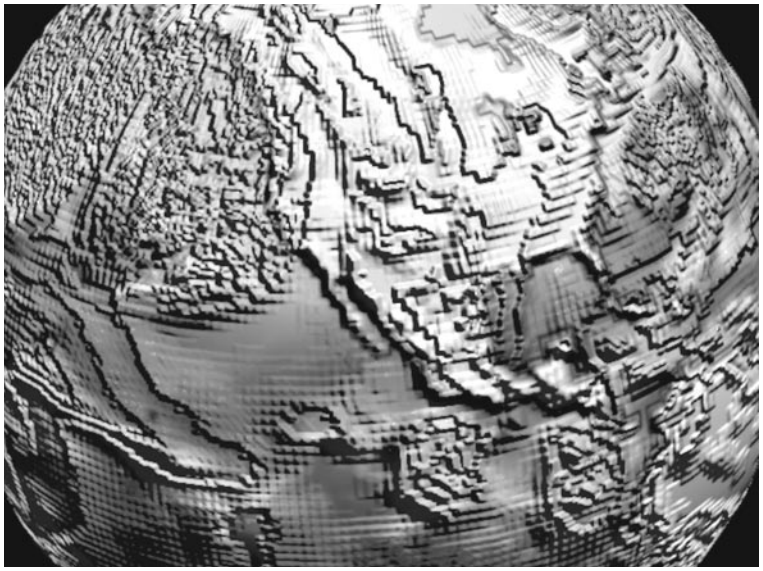
Applied Visualization

Converting data into knowledge

We seek collaboration with industry to solve difficult visualization problems involving voluminous and distributed data in areas such as oil exploration, pollution monitoring, genetic modeling, or the information superhighway. Solutions often require multidisciplinary expertise.



Color and texture depict temperature and wind speed in a small part of a massive global climate database.

Solving unique visualization problems

LLNL has a long history of solving unique, seemingly unsolvable problems. Our interdisciplinary collaboration often leads to new discoveries on projects in which data are difficult to visualize, visualization objectives are ill-defined, or previous attempts at visualization have been unsatisfactory. We are expert at maximizing the application of available visualization tools and techniques as well as at developing innovative new tools and techniques.

Visualization techniques

Finding an appropriate technique to visualize data can be laborious and frustrating. Although data are often specific to a discipline, what we want to learn about data can usually be expressed in generic terms. For example, the accompanying image uses color and texture to relate temperature and wind speed. But color and texture can correlate variables from almost any discipline: temperature and flow of steam-heated crude oil into a well or density of brain matter and the neuron activity level adjacent to a tumor. Using a nondiscipline-specific vocabulary expands possible sources for a technique and also narrows the choice to those that will accomplish the visualization goal.

APPLICATIONS

- *Visualization of very large/ distributed databases and datasets*
- *Data handling or rendering algorithms with massively parallel computers and large-scale distributed systems*

Platform independence

We also have software that handles data independent of discipline, platform, or format. For example, we can read data from a platform with one word size and analyze it using a computer with a different word size and format.

Availability: Our visualization expertise is available now. We seek collaboration on visualization with industries that access massive, distributed databases on diverse platforms and work on problems of national economic interest.

Contact

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