Introducing: The grid*Mathematica*™ 3D Pollution Simulation

This grid*Mathematica* simulation tracks pollutants and their movements due to winds as well as their chemical interactions subject to catalysts, such as the position of the sun. This research will help scientists understand the contribution of a certain pollution source to the observed concentration of pollution at a particular site, the effect on air quality due to the introduction of a new pollution source, and the most cost-effective strategy for reducing pollutants' concentrations in order to meet air quality standards.

Using *Mathematica*® technology, a complex problem becomes manageable

grid*Mathematica* 2 provides an easy-to-use parallel language that empowers the *Mathematica* environment to allow users to solve their toughest problems on modern multiprocessor machines, clusters, grids, and supercomputers.

grid*Mathematica*'s rich web of algorithms offers straightforward tools for developing and debugging parallel applications, allowing researchers to work at a higher level by focusing on the problem and its solutions rather than the details of the parallelization.

This simulation is but one illustration of how *Mathematica* can take different disciplines and scientific data subcultures and combine them into one organized output. A broad and generalized software, *Mathematica* can be easily manipulated to create an application for use at the workgroup level.
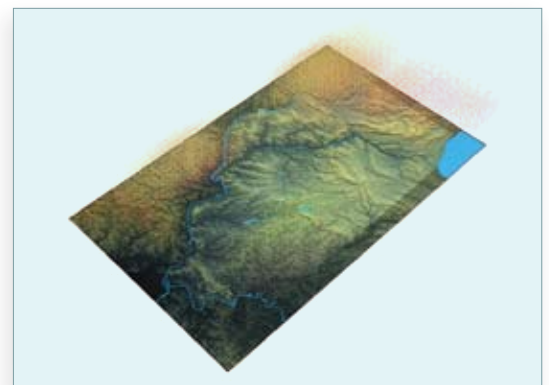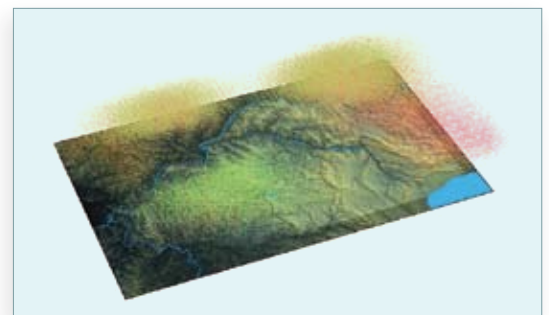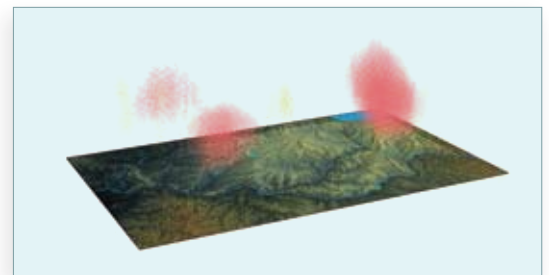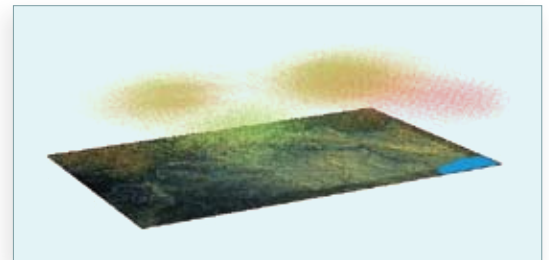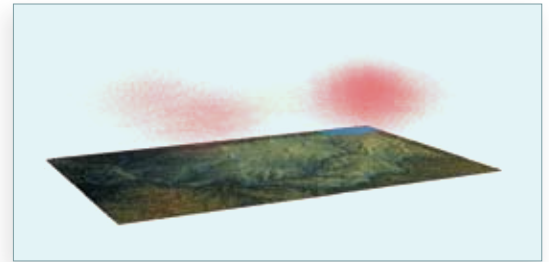
From modeling to prototyping to data handling to post processing to deployment–it is all available in one software package–grid*Mathematica*.

Other uses of the technology used in this simulation

These same few lines of code can be modified for use in **epidemiology, porous media tracking, biological agent diffusion, climatology, combustion engine simulations,** and **urban sprawl studies**.

For more information, please see our website: www.wolfram.com/gridmathematica.

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