

PREFACE: SCIENTIFIC DATA VISUALIZATION

Nowadays, full-scale experiments for a number of complex gas-dynamics problems are not feasible because of reasons, such as the process transience, their inaccessibility for researcher eyes, high cost, etc. Therefore, high-quality scientific data visualization that reproduces complex physical processes plays an important role in the modern investigation of all kinds of phenomena in almost every branch of natural science.

This issue is devoted to the following software packages for the scientific data visualization - CFD multiprocessor package GasDynamicsTool[®] (GDT) and visualizer ScientificVR[®] - developed by the GDT Software Group located in Tula, Russia.

The GDT Software Group specializes in computational fluid dynamics (CFD) and develops high quality CFD software to solve actual problems in the areas of aerospace engineering, ecology, antiterrorism, combustion and detonation processes, and multi-phase flows.

The issue is organized as follows: first, it provides the general information about the GDT package and ScientificVR[®] visualizer. Then the main features and principles of work of the ScientificVR[®] visualizer are described, followed by several example of the visualizer performance for actual application problems. Finally, it shows the application of the ScientificVR[®] visualizer for visualization of the rapidly growing branch of science – nanotechnology.

A Note to Subscribers: The print copy of Volume 21, Issues 1-4 is quite small. However, the size of the electronic version of these issues, with all movies included, is relatively large. We feel that the content of these issues provides important information to the community, and to be able to have a complete understanding of the content you will need to view the movies that are included. Therefore, we will provide subscribers with free online access to Volume 21, Issues 1-4. Subscribers should contact orders@begellhouse.com if they experience any difficulty accessing the online version of this volume.