

Advanced Vector Field Analysis using Integration-Based Visualization

Christoph Garth, Hari Krishnan, Kenneth I. Joy, Institute for Data Analysis and Visualization, UC Davis
Hank Childs, Visualization Group, Lawrence Berkeley National Laboratory

State-of-the-art computational science simulations generate large-scale vector field data sets. For such simulations, a novel class of techniques for vector field visualization can provide dramatically increased insight into the underlying science questions. These so-called integration-based methods can accurately analyze and depict typical vector field phenomena such as transport and mixing. This poster provides an overview of Integral Surfaces and Lagrangian visualization, two techniques that are a focus of research at the Institute for Data Analysis and Visualization (IDAV) at UC Davis in the context of the SciDAC Visualization and Analytics Center for Enabling Technologies (VACET).