An Overview Of Immersive Scientific Visualiztion

Zhongyuan Yu
algoyu@163.com

Stefanie Krell
stefanie.krell@mailbox.tu-dresden.de

1. Introduction

Scientific Visualization is the Visualization of scientific phenomena. The purpose is to enable scientists to understand,illustrate and get insight from their data. The field deals with high amount of data. The use of stereoscopic images can improve the depth cue and the perception of the spatial relationships which might be crucial for scientist when analysing data.

2. Classical Applications and Equipments

CAVE:An immersive virtual reality environment where projectors are directed to between three and six of the walls of a room-sized cube it provides an immersive, stereoscopic environment.It uses motion capture system , which records the real time position of the user,for interaction.Also,CAVE2 was released in October 2012.

Caffeine molecular viewer:A molecular viewer Caffeine supports both standard desktop computers as well as multi-screen IVR systems Support for latest generation of HDMs is currently being developed.

Curtin HIVE(Hub for Immersive Visualisation and eResearch):An advanced visualisation system to serve the growing demands of researchers and industry for visualisation, virtualisation and simulation capabilities.It is a multi-user, multi-display facility and the screen is illuminated using three 1920*1200 DLP projectors warped and blended.

3. Difficulties in This Field

3.1.