Aspects of 3D Visualization of a Complex Cave System

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1. Project Overview

- 2. The Visualization of the "Dachstein Hole"
- 2.1 General Remarks
- 2.2 Data Acquisition, Transformation and Mapping
- 3. Demonstration of a Video Film





Austrian Alpine Club

Cave Exploration Group in Schladming, Styria

Dresden University of Technology

- Institute for Cartography
- Computer Center
- Audiovisual Media Centre

Project Participants





Project-Associated Fields



Where is the Dachstein?

Project Location





Project Location is ...



Dachstein Southface



- Interactive processing of large image files
- Online rendering of densely meshed geometry data
- Effective rendering of extensive video sequences in batch mode
- 8 R10 000 processors
- 3 GB main memory
- InfiniteReality2 graphics
- DIVO and GVO videoboard
- Workplace with two superwide-24"- monitors
- Shuter glases, space mouse, autostereoscopic display

Performance Requirements for Graphic Resources

Visualization of the "Dachstein Hole"

- Surveying of the cave based on modern 3D methods
- Reproduction of the cave and surrounding Alpine panorama as true to life as possible
- Intension to achieve the results with the available commercial software only

Aims of Work

• Choice adequate interfaces

- Data can be input to both for the animation and the virtual reality
- Use of commercial software only

Defining Conditions for the Solution









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Reconcile Impressions ...



Reconcile Impressions ...



12

Reconcile Impressions ...



Measured Data

3













Raw 3D Cave Model



3D Cave Model Faccetted











Terrain Model 80 MB



Landscape Visualization: Data















Examples 1





Examples 2



Examples 2

