

π -CAVE system in Kobe University

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1

Outline

- π -CAVE in Kobe University
- π -CAVE Hardware
- Overview of π -CAVE (movie)
- π -CAVE Software
- Summary

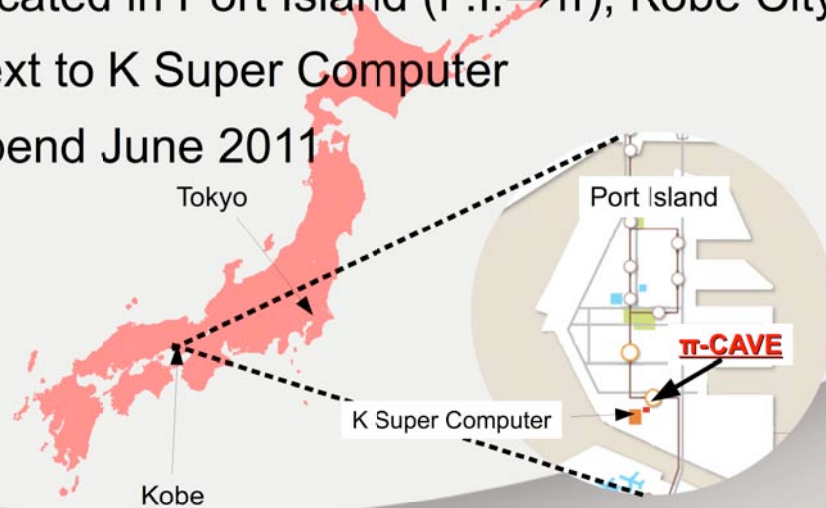
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2

π -CAVE in Kobe University

CAVE-type IVE System

- Located in Port Island (P.I. \rightarrow π), Kobe City
- Next to K Super Computer
- Opened June 2011

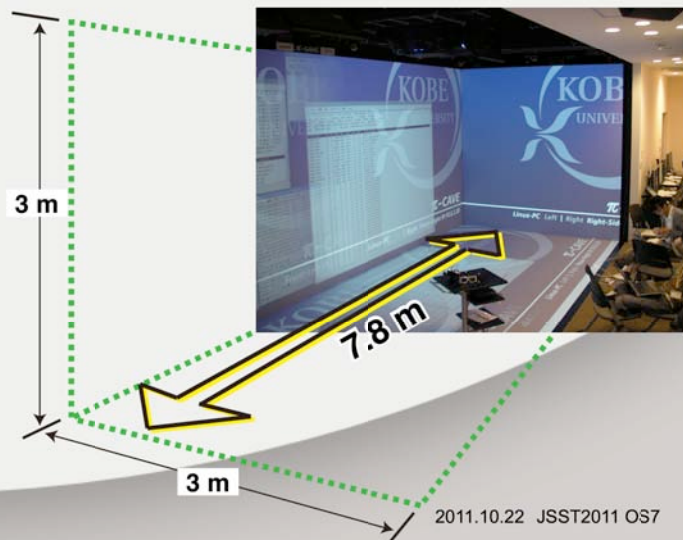


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3

Screen system

- Rectangular geometry
- Probably the largest CAVE in Japan
- 4 screen

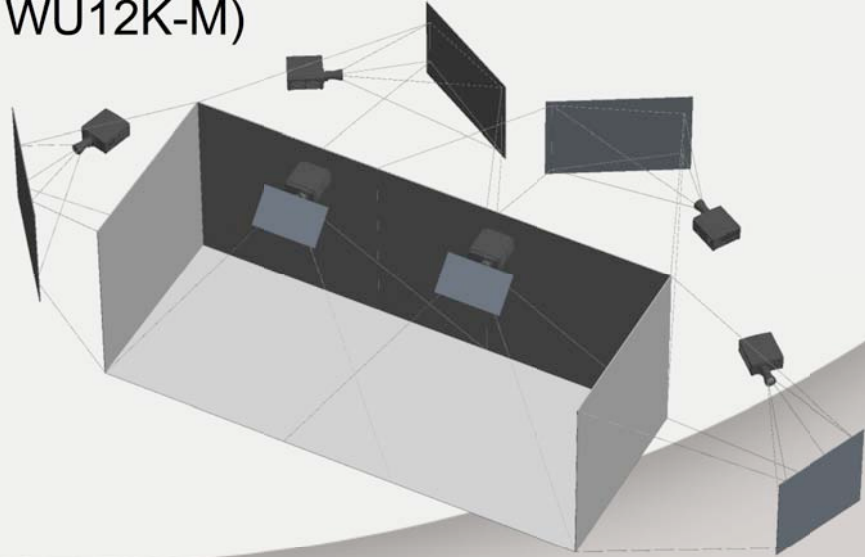


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4

Projectors

- 6 Stereo Projectors (WUXGA, 10 500 lumens, Christie WU12K-M)



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5

Wireless tracking system

- 10 VICON Cameras(640x480)
- Wand controller



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6

Computer systems

1. Large memory Linux System

- HP Z800
- RHEL5
- 192GB RAM
- QuadroPLEX
2200 D2*3
- NOT Cluster!



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7

Computer systems

2. PC Cluster

- HP Z400 * 7
- 1 Master & 6 Slave
- Windows XP 64bit
- 4GB RAM / 1node
- Quadro 5000



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8

Sound system

a) 3D Sound system

- X-spat boX2™
- 8 speakers

b) 7.1ch Surround



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9

Overview of π -CAVE

Produced by Daiseke Meno

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10

Middleware

- CAVELib
- VR juggler
- OpenGL

π -CAVE Software

We have developed basic libraries for CAVEs.

- a) Virtual touch screen
- b) 3D model data loader & viewer
- c) 2D movie file player
- d) High speed 4D volume rendering

π-CAVE Software

We have developed basic libraries for CAVEs.

- a) **Virtual Touch Screen**
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13

Virtual Touch Screen

- Instead of Buttons
- Control application intuitively



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14

π-CAVE Software

We have developed basic libraries for CAVEs.

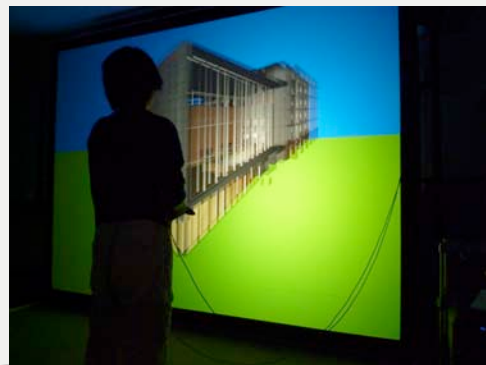
- a) Virtual Touch Screen
- b) **3D Model data loader & viewer**
- c) 2D Movie file player
- d) High speed 4D Volume Rendering

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15

3D Model data loader & viewer

- GLMetaseq* library
- Extended for multi-GPU and multi-thread processing
- Fast rendering with VBO



<http://code.google.com/p/glmetaseq/>

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16

π -CAVE Software

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- a) Virtual Touch Screen
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- c) 2D Movie file player
- d) **High speed 4D Volume Rendering**

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17

High speed 4D Volume Rendering

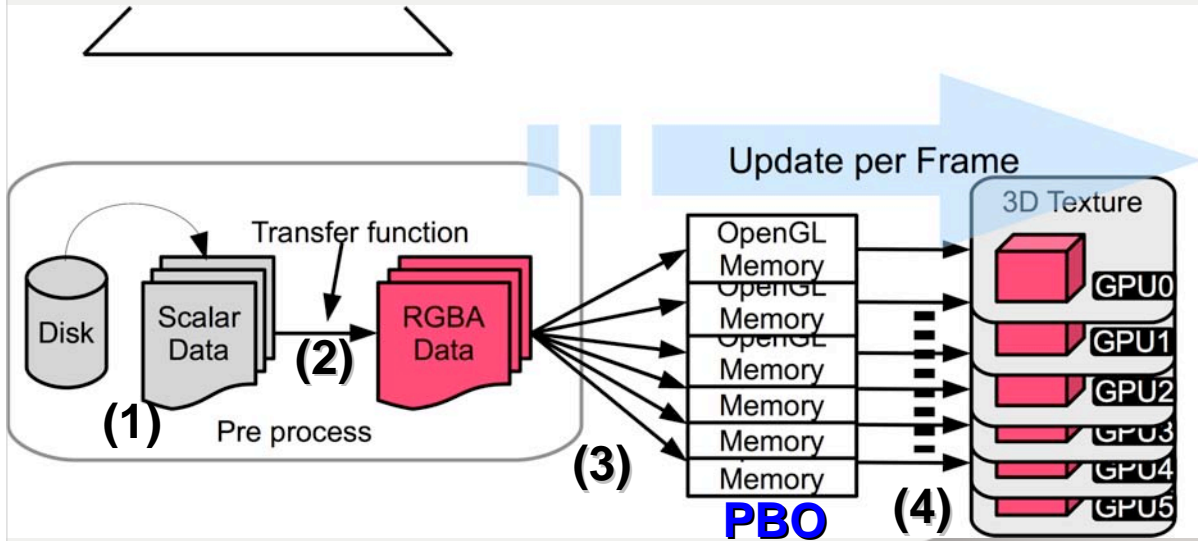
- Standard 3D Texture Mapping
- Speed up by PBO (Pixel Buffer Object)



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18

High speed 4D Volume Rendering



High speed 4D Volume Rendering

Movie

Application launcher *Multiverse*

Combining these basic libraries, we have developed an application launcher named *Multiverse*.

- Talk by Kageyama, in the 2nd session.



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21

Summary

- π -CAVE was installed in Kobe University
- We have developed basic libraries for the CAVEs

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22

