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Parallax barrier autostereoscopy

Tracked 2-view

Untracked panoramagram
Parallax barrier trade-offs

**Good**
- inexpensive
- hi-res (tiled)
- VR quality

**Bad**
- Lo-res (single tile)
- dark
- single user
- latency-critical
Varrier computational model

Floating point, Continuous barrier model
Color shifts

Physical Linescreen

Screen Pixels (with sub-components shown)

Unfocused colors

Shifted linescreens

three separate Virtual Linescreens

Screen Pixels (with sub-components shown)
# Form factors

<table>
<thead>
<tr>
<th>System</th>
<th>Panel size</th>
<th>Net res</th>
<th>Tracking</th>
<th>$</th>
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<tbody>
<tr>
<td>CV-35</td>
<td>20 in.</td>
<td>2600 x 6000</td>
<td>IS-900 face tracker</td>
<td>$210 K</td>
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<td>15.6 MP</td>
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<td>30 in.</td>
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Tracking

• Intersense acoustic-inertial
• ART camera-marker based
• Neural net camera-based
Variety of applications

Geology

Telecon

Astronomy

Biology

Art
Six years of progress

Constants

- Tracked 1st person VR
- Orthoscopic
- Guard bands
- Floating point

Improvements

- Algorithms
- Construction, calib.
- Barrier resolution
- Performance

Ongoing

- Dynamic barrier
- Haptic autostereo
- Tracking improvements

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