Problem & Solution

• **HDR image tone mapping**: non-linearly map the gray levels in HDR image to satisfy the gray scale limitation of display screen and preserve more details in the generated low dynamic range (LDR) image.

• The **performance** of HDR image tone mapping is influenced by the gray scale of display screen.

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**How to increase the gray scale of display screen for displaying HDR images?**

• **Basic idea**: sacrifice the high resolution to increase gray scale of display screen by edge preserved dithering.

• **Overview**

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**ID 128**: High dynamic range image tone mapping with edge preserved dithering
Experiment

- **Dataset**: Funt et al HDR Dataset (107 images) and HDRSID Dataset (232 images)

- **User study**: 15 participants

<table>
<thead>
<tr>
<th>OCTM</th>
<th>Funt</th>
<th>HDRSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better</td>
<td>58</td>
<td>93</td>
</tr>
<tr>
<td>Similar</td>
<td>36</td>
<td>105</td>
</tr>
<tr>
<td>Worse</td>
<td>13</td>
<td>34</td>
</tr>
</tbody>
</table>

- **Failure**: cause artifacts in texture area
- **over-enhance textures**

No washed-out, avoid contouring, and retain more details