Institute of Neuroinformatics
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Computation in Neural Systems: Biological Vision

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www.ini.unizh.ch/~kiper/comp_vis/index.html
Cues to depth perception:

Monocular depth cues:

- Size
- Interposition
- Perspective
- Lighting and shadows
- Clarity and elevation
Binocular depth cues:

Convergence

Stereopsis (binocular disparity)
Binocular disparity

- Fixation point
- Images of fixation point are fused
- Interpret as far
- Interpret as close

Kandel, Schwartz, Jessell, 1991, 30.16
The horopter
The horopter and Panum’s fusion area
The Wheatstone stereoscope

Diagram of the operation of the Wheatstone stereoscope.
The correspondence problem in stereopsis
Neurons tuned for binocular disparity (monkey V1)

Data from Poggio and Talbot, 1981. Spillmann, 1990, p325
Binocular receptive fields of disparity tuned neurons