Stereo Processing by Semiglobal Matching and Mutual Information H. Hirschmuller (PAMI 2008)



- A pixel-wise, Mutual Information (MI)-based matching cost
- Cost aggregation as approximation of a global, 2D smoothness constraint by combining many 1D constraints
 - Two terms by using a lower penalty for small changes
- Disparity computation as WTA and by disparity refinements as consistency checking and sub-pixel interpolation
 - Propagating valid disparities along paths from eight directions
- Multi-baseline matching by fusion of disparities
- Further disparity refinements: peak filtering, intensity consistent disparity selection, and gap interpolation
- Matching almost arbitrarily large images
- Fusion of several disparity images using orthographic projection