

# Augmented Reality Invited Talk

## New Approaches to 3D Displays

by

**Rolf R. Hainich**

Hainich&Partner

Thursday, October 16<sup>th</sup>, 3:15pm, Lecture-Room, Hausknechtstrasse 7

### Abstract

3D displays have been researched for decades, and have been announced to be market ready 'real soon now' for almost as long, with dwindling credibility.

Does the current explosion of computing and especially graphics power make any difference? Starting from simple considerations about perspective, laser technology, holography, holographic optical elements, we will look upon new approaches with near eye displays as well as auto holographic (SeeReal) and holographic auto stereo approaches. We will also talk about light field recording (camera arrays) and according techniques like holographic encoding. The highly related questions about the behavior of light and optics in laser and



holographic contexts are presented with very simple math and modeling, allowing to answer basic design issues quickly and easily.

Parts of the contributions on near eye displays and holographic encoding are derived from the referee's recent book "The End of Hardware". About auto holography, materials from the book, its web page, and several more materials and new elaborations will be presented. We will see that the prospects for mass applications of 3D displays may become much better with the new approaches arising.

### Biography

Rolf R. Hainich received his degree in electronics engineering and computer science from the Technical University in Berlin. After research work on computer networks, he acquired comprehensive industrial experience in design (real time processing and networking, media technology, communications, computer architecture, sensor technology) and management.

Subsequently, he was chief consultant in several public technology funding programs, engaged in promoting new technology, turned to venture capital, supervised several high tech companies. Currently he is an independent technology and management consultant.

Beginning in the early 90's, he developed ideas on augmented reality with emphasis on virtual devices, initiated conferences, helped to start research projects in related fields, wrote papers and studies.

2006 he published his book "The End of Hardware - A Novel Approach to Augmented Reality", being centered about the ubiquitous application of near-eye displays, and related technologies.