Definiton und Motivation

Virtual reality (VR) has dominated tech headlines in recent years with its ability to immerse its users in a virtual world. Gaming is the most well-known uses for VR. Moreover, virtual Reality has been adopted to education for teaching methods, to medical training and to military. For Virtual Reality to be truly immersive, it needs convincing sound to match. The immersive graphics need equally immersive 3D audio that replicates the natural listening experience.

A challenge for a realistic 3D audio in VR is complex virtual scenes with thousands of sounds sources. For each source, the computational workload increases proportionally. To reduce compu- tational complexity while maintaining the same auditory impression for the listener, many different methods have been proposed.

In this work I am going to use the 3D audio technique ‘ambisonics’, which is a high-resolution surround-sound system developed in the early 70s. Ambisonics has significant advantages com- pared to other 3D audio techniques.

Überblick