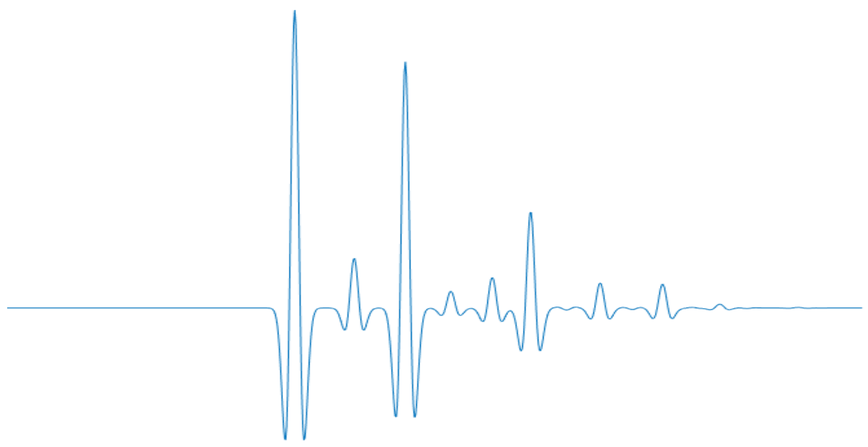
Lecture: Virtual Acoustics

SS 2025

Instructor

Dr. Albert Prinn



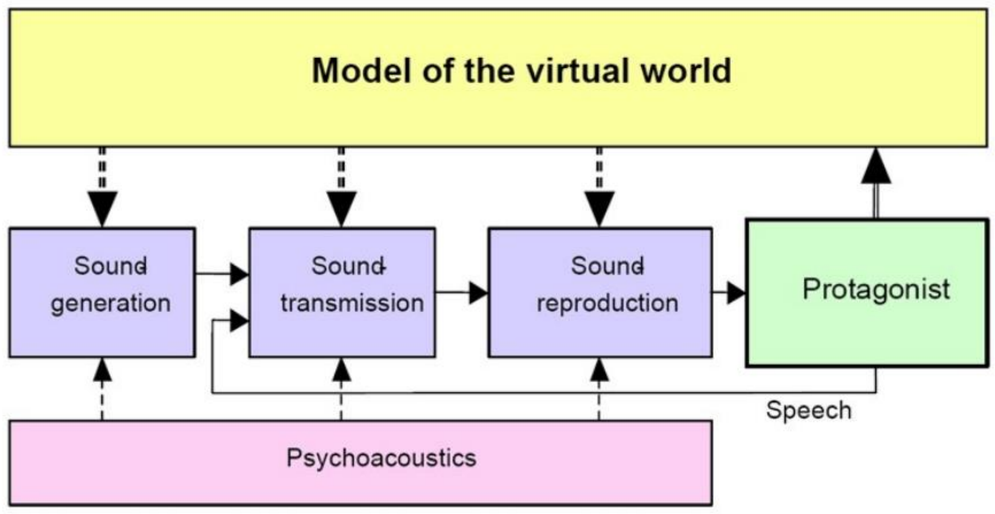
Format

Lecture:	2 SWS, Wednesdays, 10:15-11:45
ECTS-Credits:	2,5
Language:	English
First Meeting:	23.04.2025, 10:15-11:45
Place:	Room 3R4.04, Am Wolfsmantel 33, Erlangen-Tennenlohe

Course Introduction

The worlds of Virtual and Augmented Reality (VR/AR) are rapidly evolving, moving beyond the domain of science fiction into homes and industries with a variety of applications. With continuous advancements in both hardware and software, VR and AR are becoming increasingly realistic, impacting entertainment, engineering, education, and science. Sound is a key element in creating convincing virtual environments, which plays a crucial role in enhancing realism and user experience. Thus, Virtual Acoustics is a vital part of virtual environments.

This course is designed for students interested in developing VA systems by combining acoustics, psychoacoustics, signal processing, and audio technologies. It aims to equip students with the skills and knowledge needed to shape the future of sound in VR and AR. Join us and immerse yourself in the exciting world where sound meets technology in immersive virtual environments!



Course Highlights

- Theoretical foundations of acoustics
- Computational modeling methods for acoustics
- Human auditory system and spatial hearing
- Spatial and binaural sound reproduction
- Case studies and demonstrations of VA systems
- Exercises in creating simple virtual sound fields
- Opportunities for internships

For further information please contact:
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