Lecture: Virtual Acoustics
SS 2023
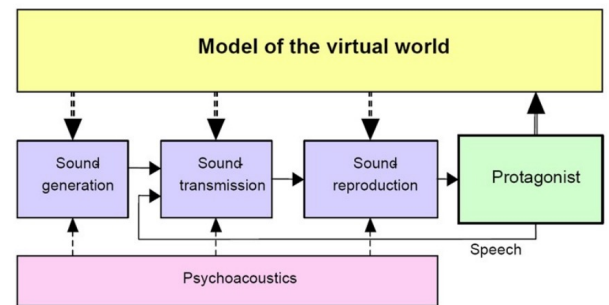
Instructor

Dr. Albert Prinn

Format

Lecture:	2 SWS, Wednesday's, 10:15-11:45
ECTS-Credits:	2,5
Language:	English
First Meeting:	19.04.2022, 10:15-11:45
Place:	Am Wolfsmantel 33
	91080 Erlangen
	Room 3R4.04

Content

Virtual and Augmented Reality (VR/AR) systems are becoming increasingly more sophisticated. While in the 1980s virtual reality was essentially science-fiction, today, recent advances in hardware and software technology are enabling convincing VR and AR. These systems have matured and are beginning to influence our lives, paving the way for novel concepts in entertainment, engineering, education, and science. Sound has an especially important role in making these simulations authentic.

This course provides an introduction into the simulation of sound for VR and AR, covering topics from multiple disciplines, including physics, signal processing, mathematics, and computer science.

The course is an ideal start for researchers, engineers, and graduate students who would like to delve deeper into the field of virtual acoustics.

Learning Outcomes and Competences

- Knowledge of the foundations of acoustics and acoustic wave theory
- Application of wave-based and geometrical modelling methods to room acoustic simulations
- Understanding of the complexity and suitability of acoustic modelling methods
- Knowledge of the human auditory system, and spatial hearing
- Familiarity with binaural and spatial sound reproduction techniques
- Awareness of the key principles of virtual acoustics
- The ability to design and auralize a simple virtual sound field

For further information please contact:
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