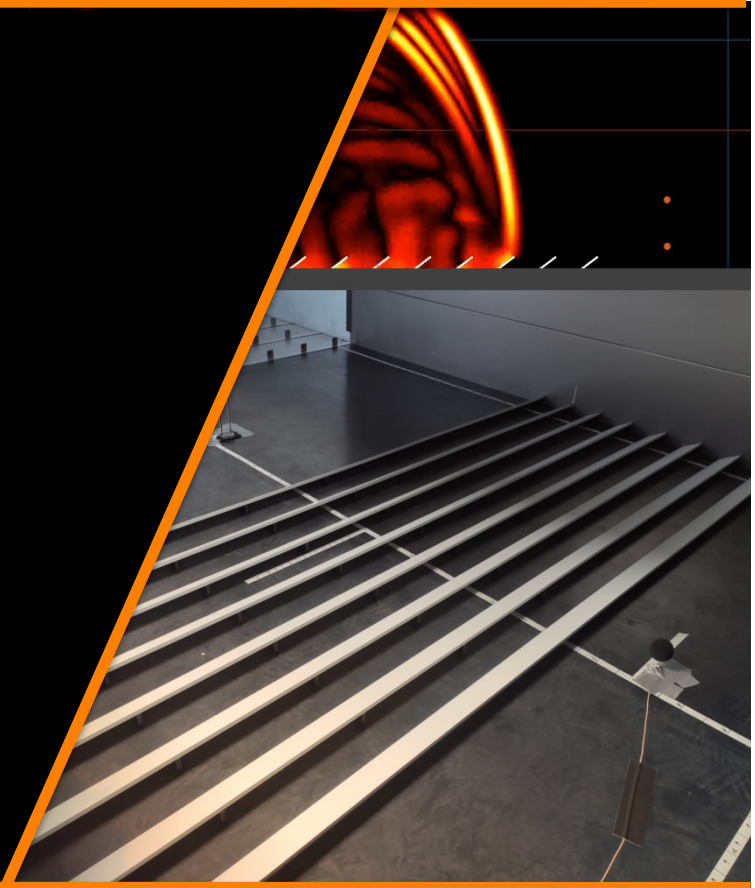
Architectural Acoustics

7LS8M0, Quartile 3 2021-2022

Introduction
Lecture I.1

prof.dr.ir. Maarten Hornikx



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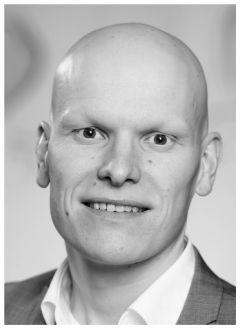
Scope and relevance of Architectural Acoustics

Multiple scales: city level, building level and building element level

Building Acoustics group

Staff


Maarten Hornikx

Constant Hak

Jieun Yang

PhD students

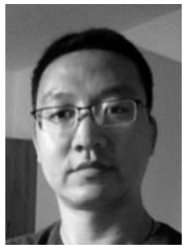
Baltazar Briere

Tanmayee Pathre

Maud Dohmen

Michalis Terzakis

Indra Sihar

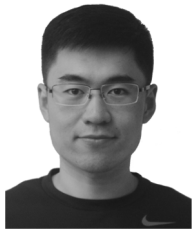

Qin Yi

Wouter Wittebol

Dingding Xie

Xueying Guan (start later in 2022)

Post-docs

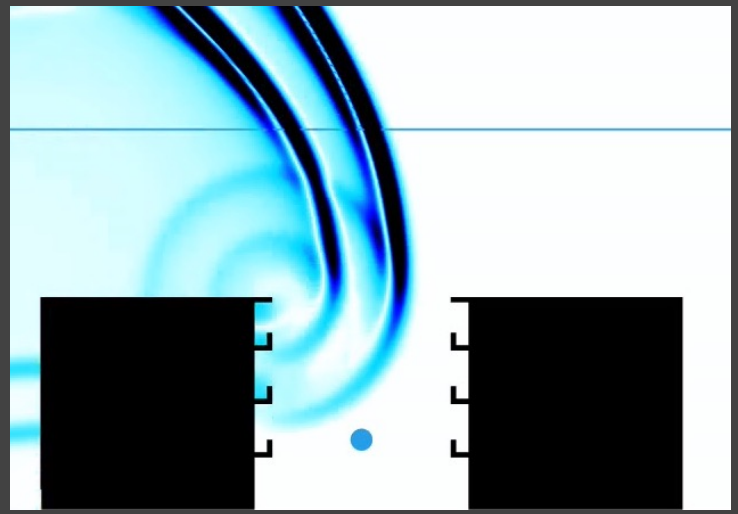

Huiqing Wang

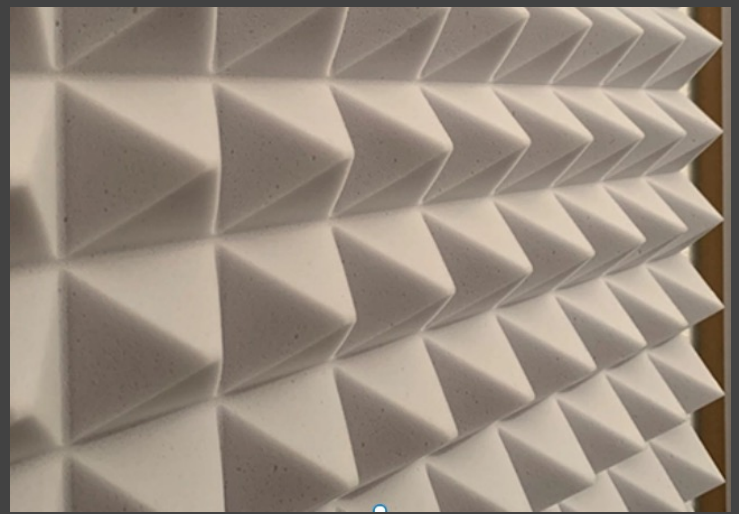
Marc van Baelen

Matthias Cosnefroy

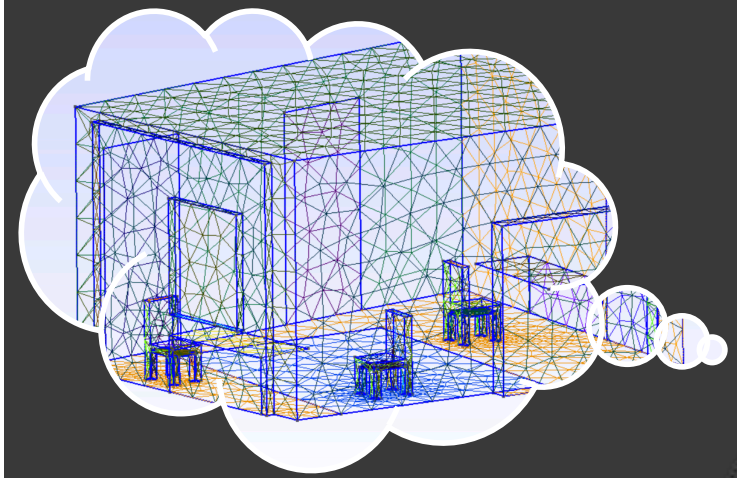
Muhammad Imran (starting 3/2022)

Research line





BOSE



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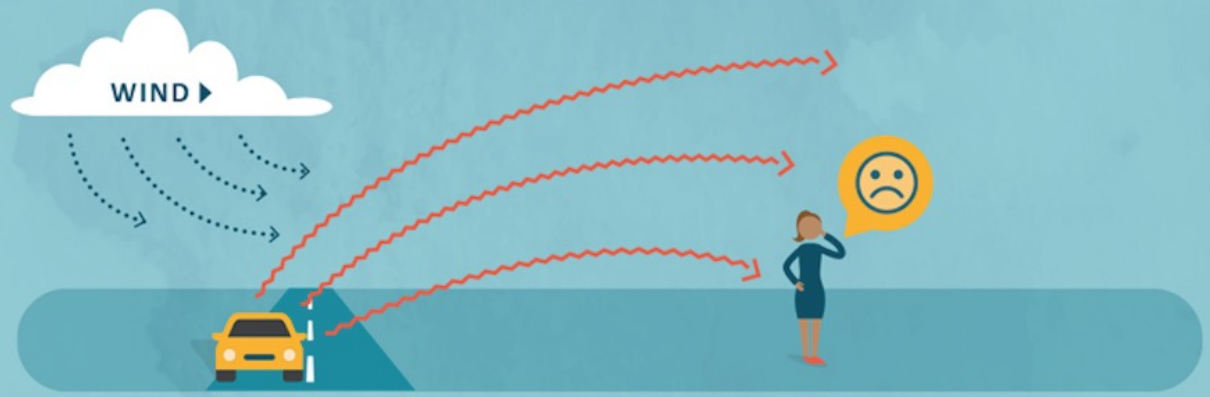
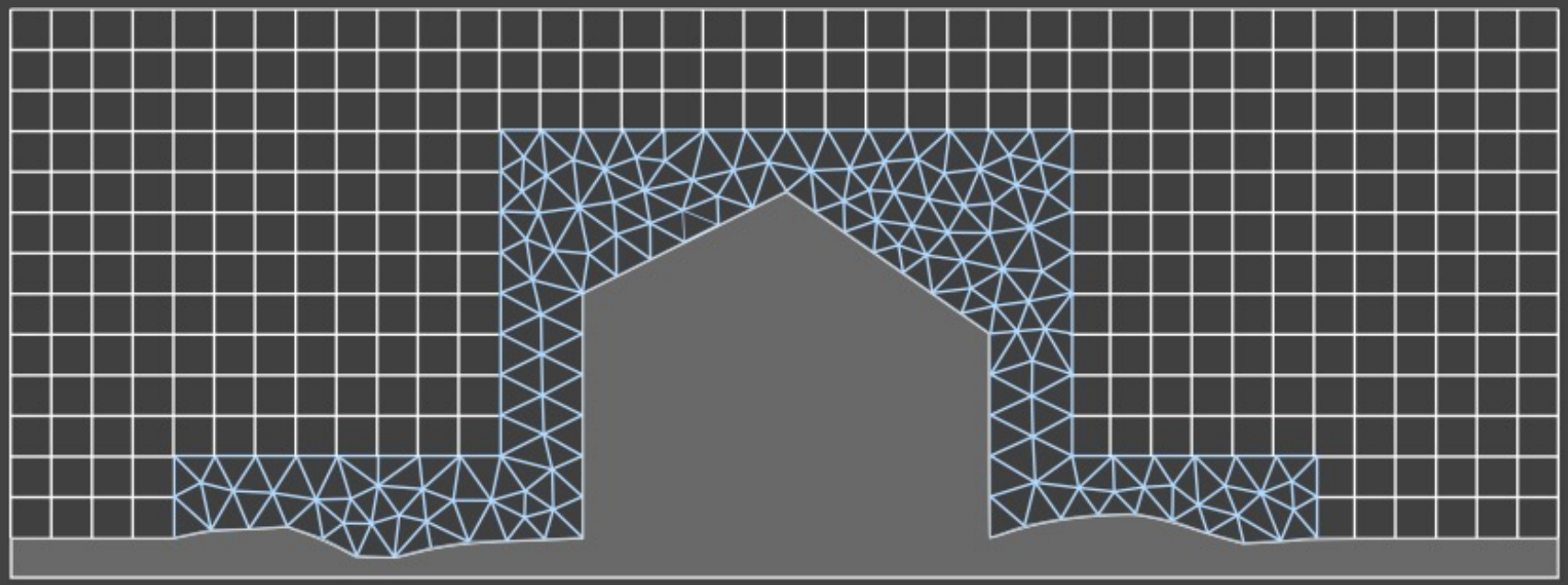
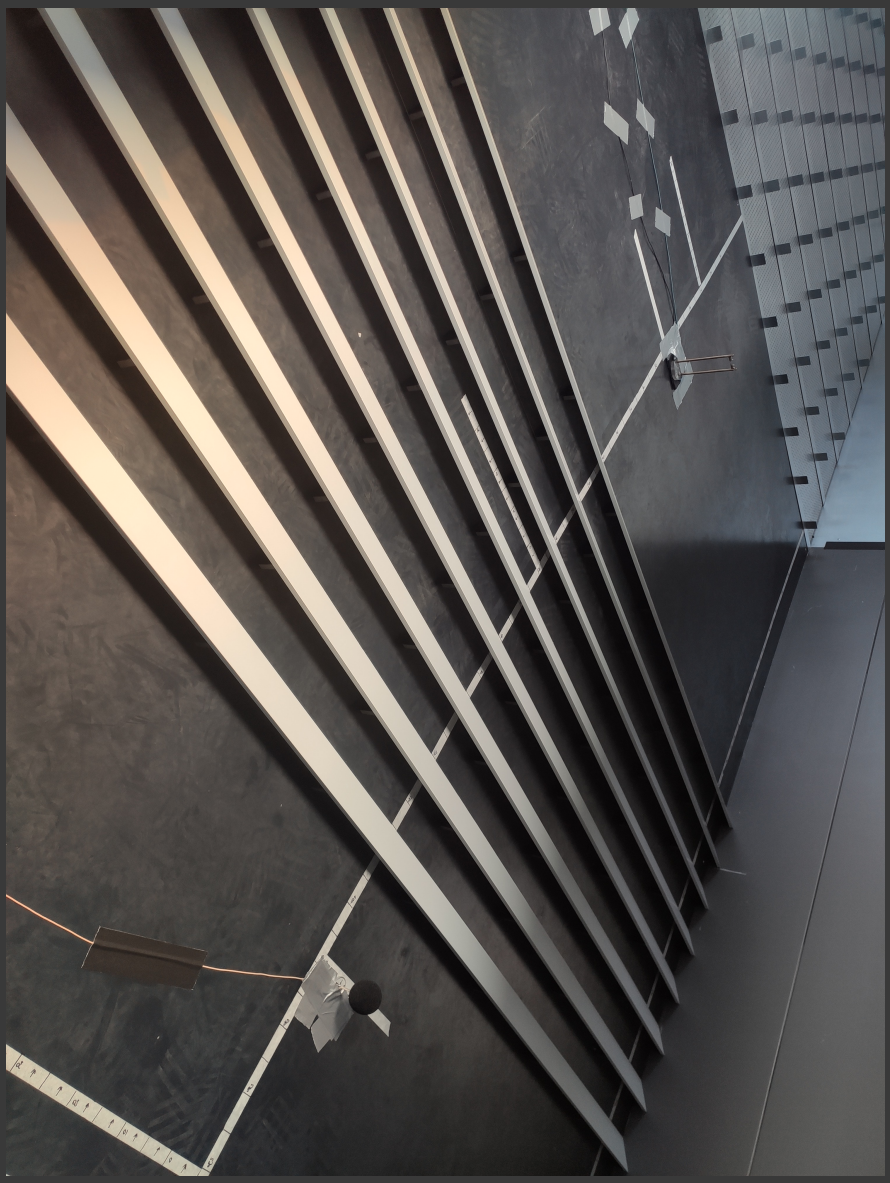
How sound travels

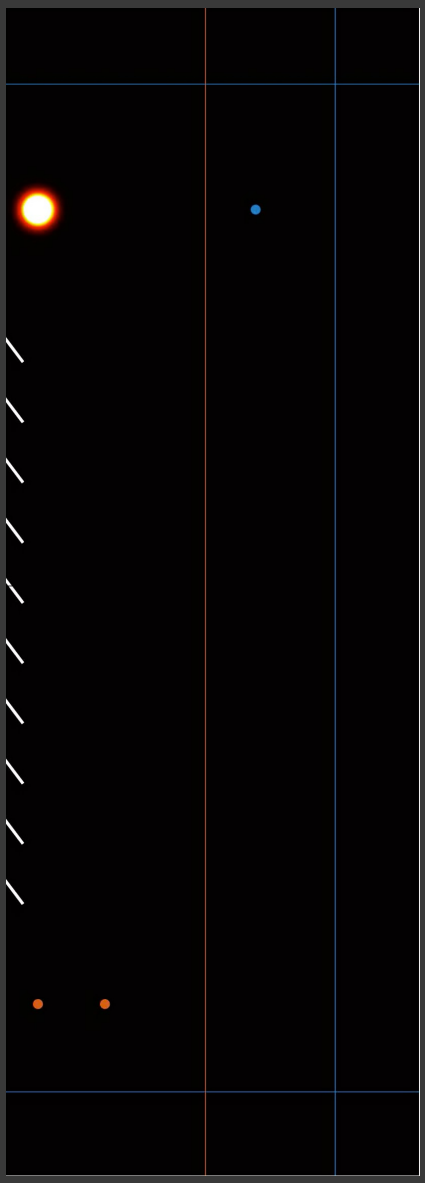
Sound waves can travel for kilometres, and the wind has a big influence on sound transmission.



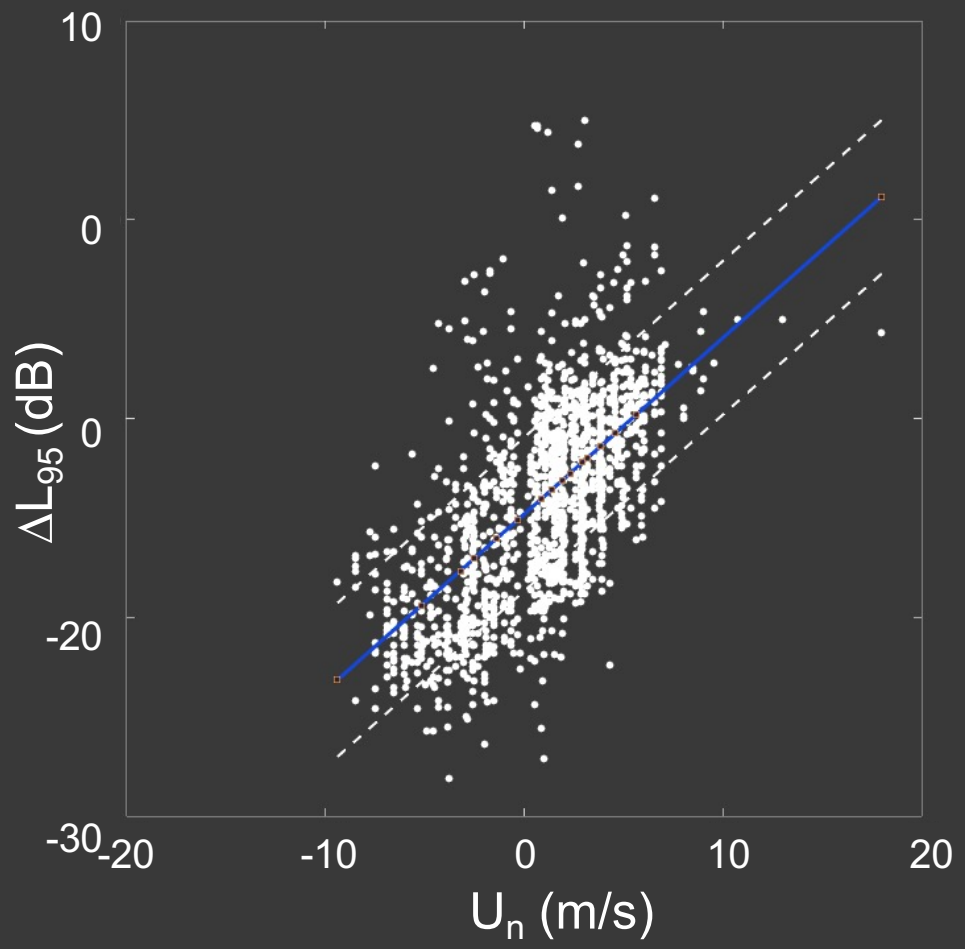

PSTD
DG

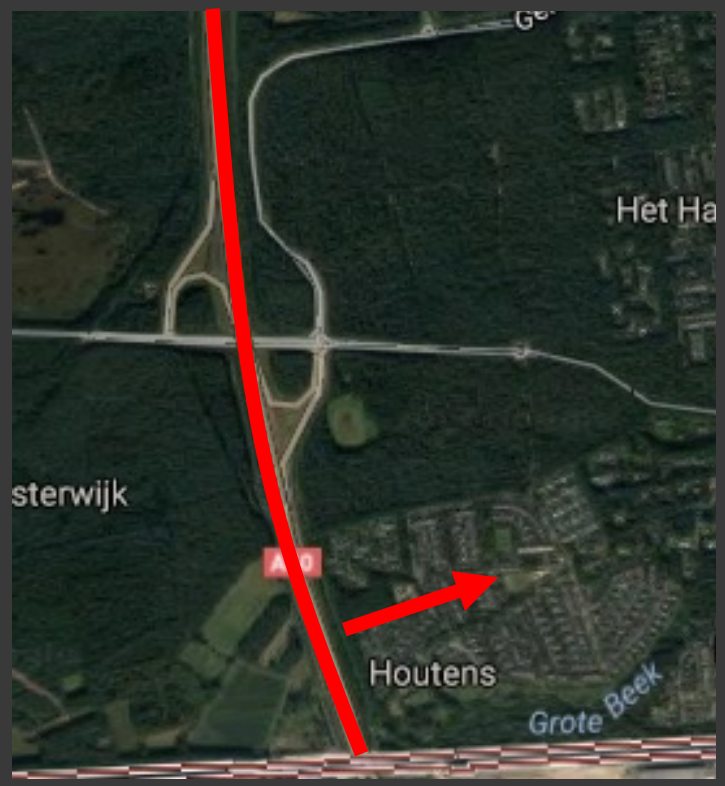
Matthias Cosnefroy



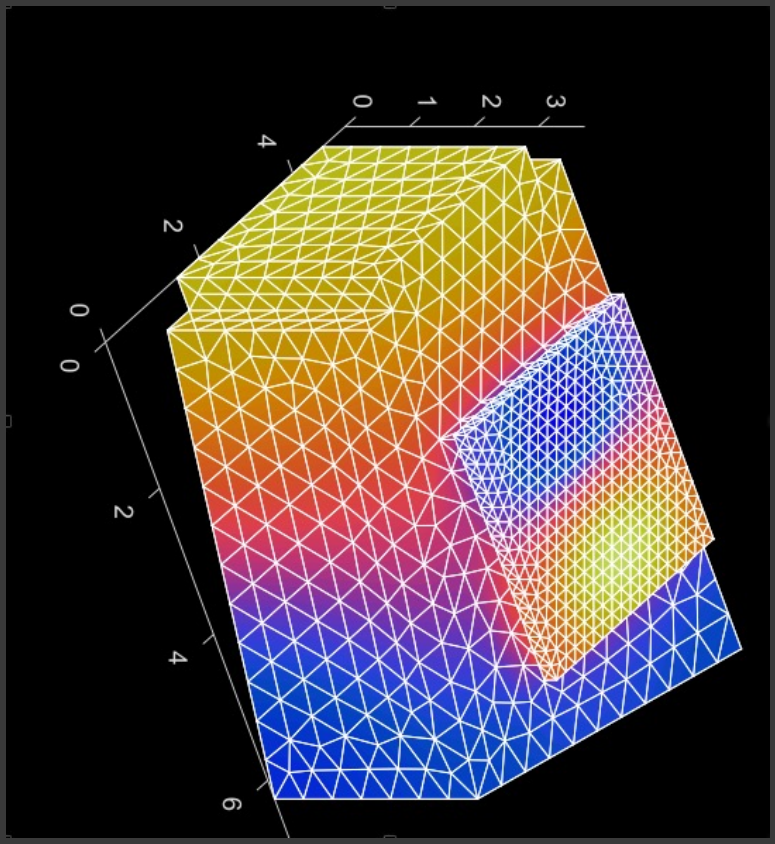


Sai Trikootam





Qin Yi



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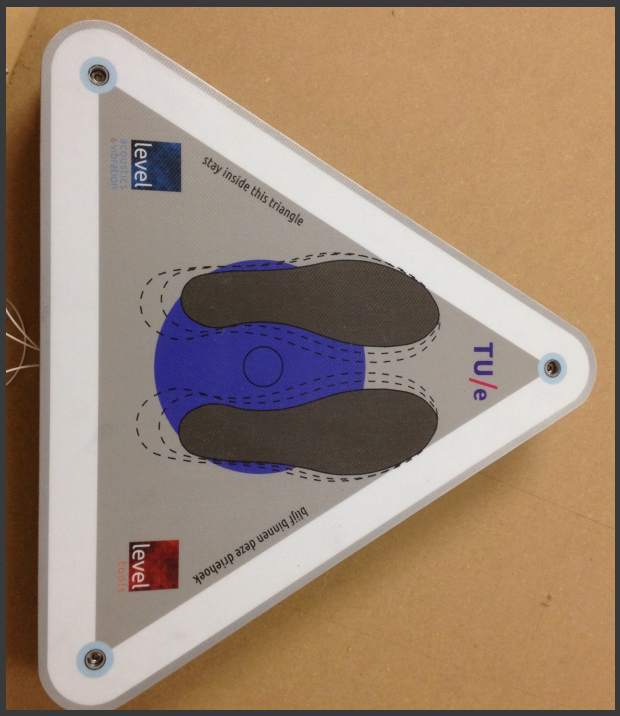
TU/e
stay inside this triangle
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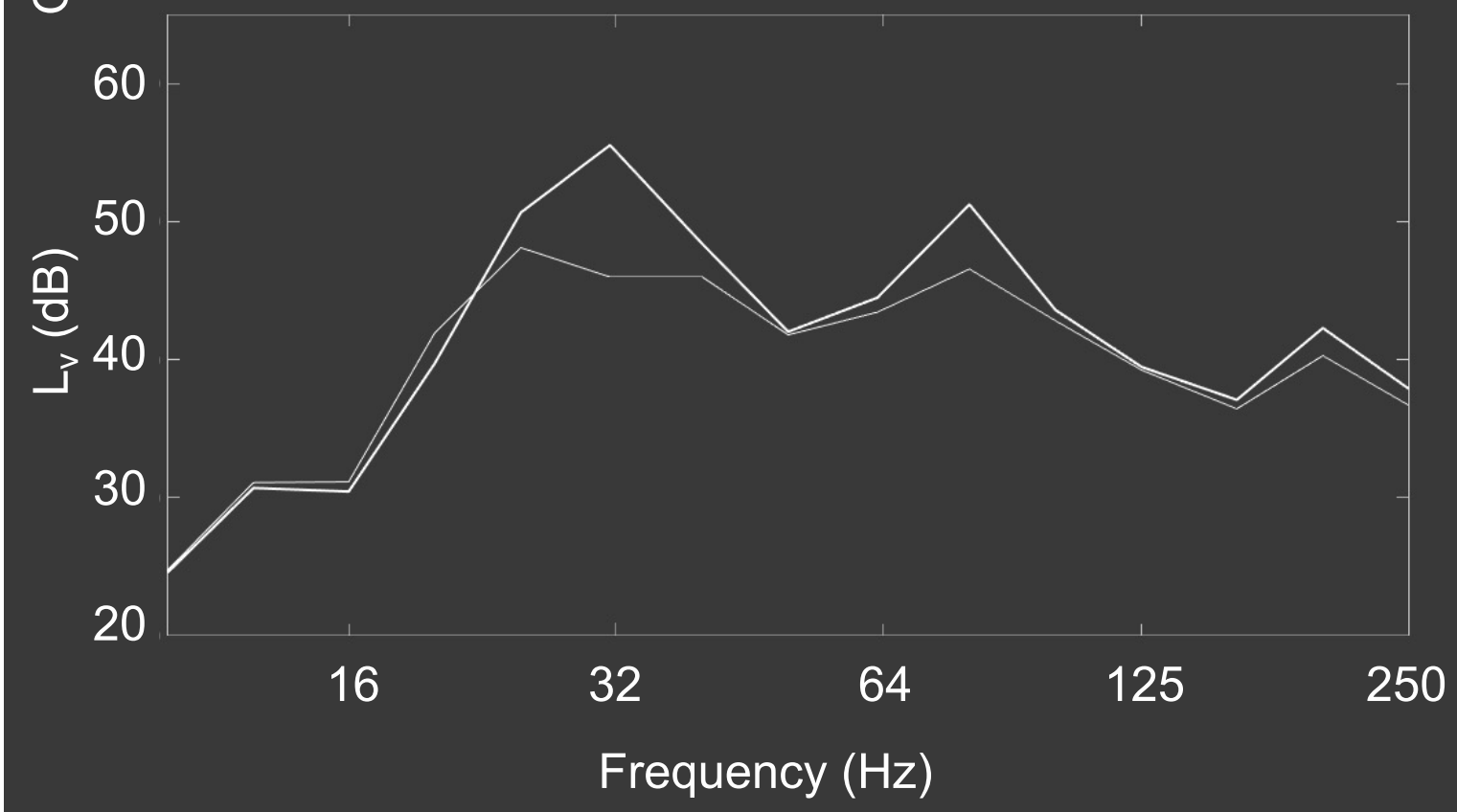
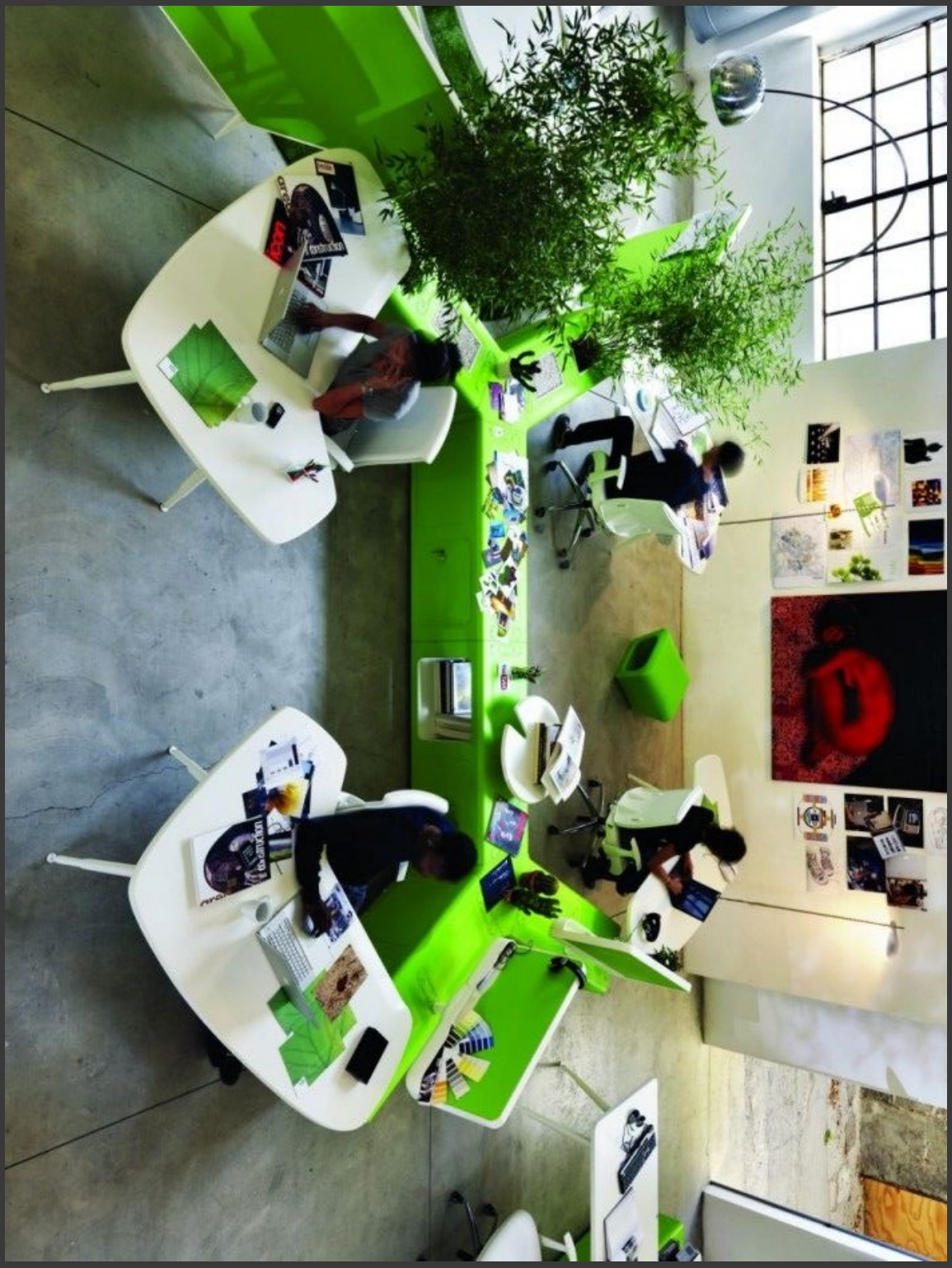
level

Qin Yi

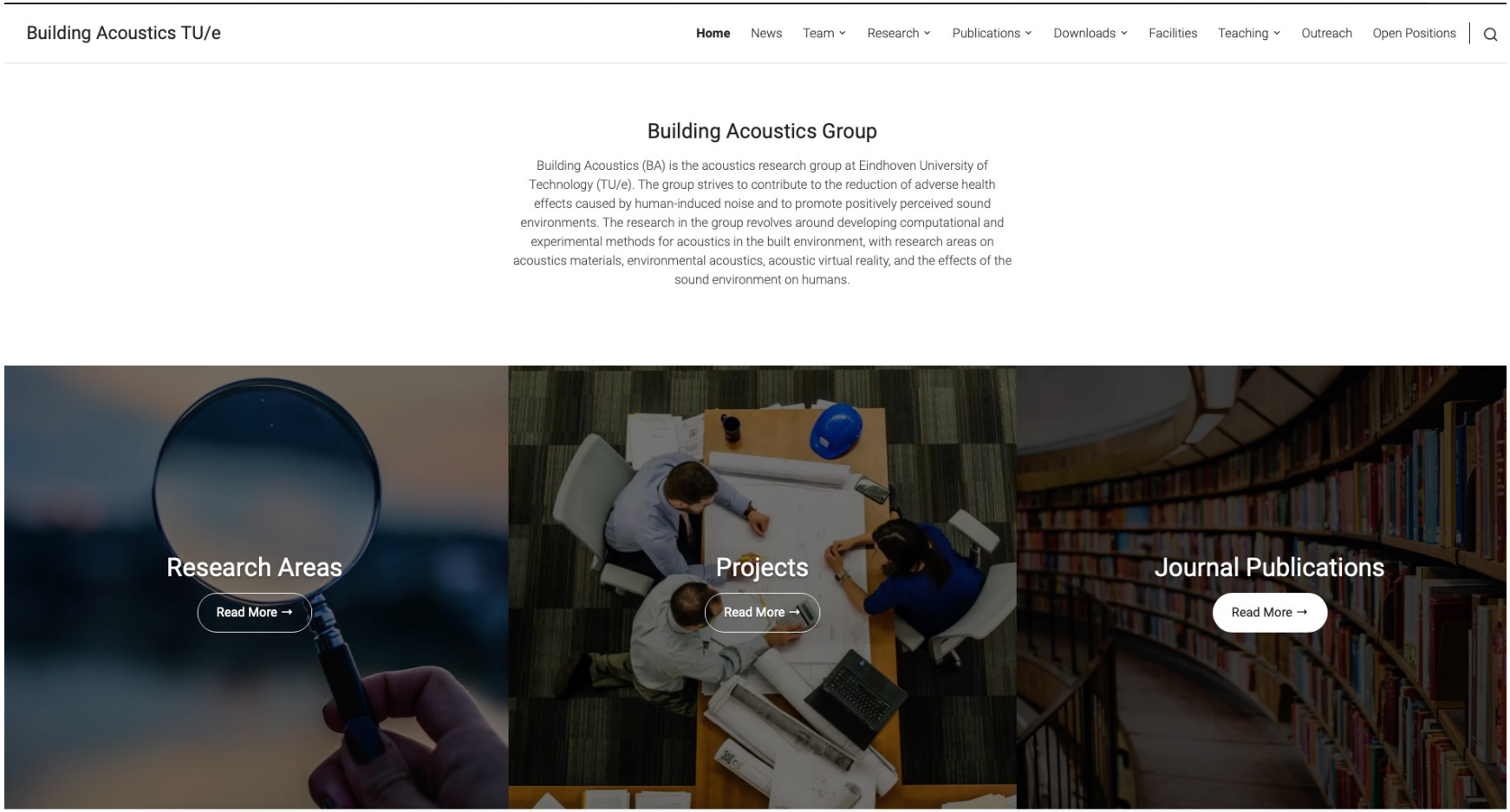


https://www.pinterest.fr/pin/546554104749080038/



Building Acoustics group: follow us

https://building-acoustics.net



Learning Outcomes and course material

Learning outcomes (brief). Ability to:

- Explain physical mechanisms of the sound and vibration phenomena.
- Numerically analyse a transfer functions and impulse responses, and their relevance.

Course material

Kuttruff. Acoustics: An Introduction. (Taylor and Francis, 2007) (compulsory), digital available at TU/e library or order at e.g.
www.bol.com
www.amazon.com

Additional course material will be provided at Canvas

Examination

The final grade for this course is based on the following components:

Type of examination	Weight	Threshold
4 hand-in assignments	40 %	No minimum
3 Matlab assignments	3 x 8 %	
1 presentation*	16 %	
Written exam (Q3)	60 %	Minimum grade 5 (out of 10)
Written re-exam (Q4)		

**Presentation in a group of two students about a concept in acoustics (list on concepts to pick from and instructions on presentation will follow)*

All information on due dates is included in the studyguide (posted at Canvas)

Schedule

Quartile 3	Contents	Type of education	Dates	Assignment deadlines & Examination
Week 1	Course introduction	Introduction (1h)	9 February	
	Introduction to Tutorials & StudyHub Hours	Introduction (1h)		
	Fundamentals of Acoustics	Lecture (2h)	11 February	
Week 2	Fundamentals of Acoustics	Tutorial (3h)	16 February	
	Fundamentals of Acoustics	Lecture (2h)	18 February	
Week 3	Fundamentals of Acoustics	Tutorial (2h)	23 February	
	Fundamentals of Acoustics	Lecture (2h)	25 February	
	Carnival holiday February 28 to March 4		2 March	
	No education		4 March	
Week 4	Guest Lectures	Lecture (2h)	9 March	HA1
	Fundamentals of Acoustics	Lecture (1h)	11 March	
Week 5	Fundamentals of Acoustics	Tutorial (2h)	16 March	
	Room Acoustics	Lecture (2h)	18 March	
Week 6	Room Acoustics	Lecture (1h)	23 March	
		Tutorial (1h)		
	Building Acoustics	Lecture (2h)	25 March	
Week 7	Building Acoustics	Lecture (2h)	30 March	HA2
	Building Acoustics	Tutorial (2h)	1 April	
Week 8	Concept presentations	Presentations	8 April	HA 4
Exam weeks			13 April	HA 3
		Exam (3h)	**22 April**	WE

Abbreviations
HA: Hand-in Assignment
WE: Written Exam

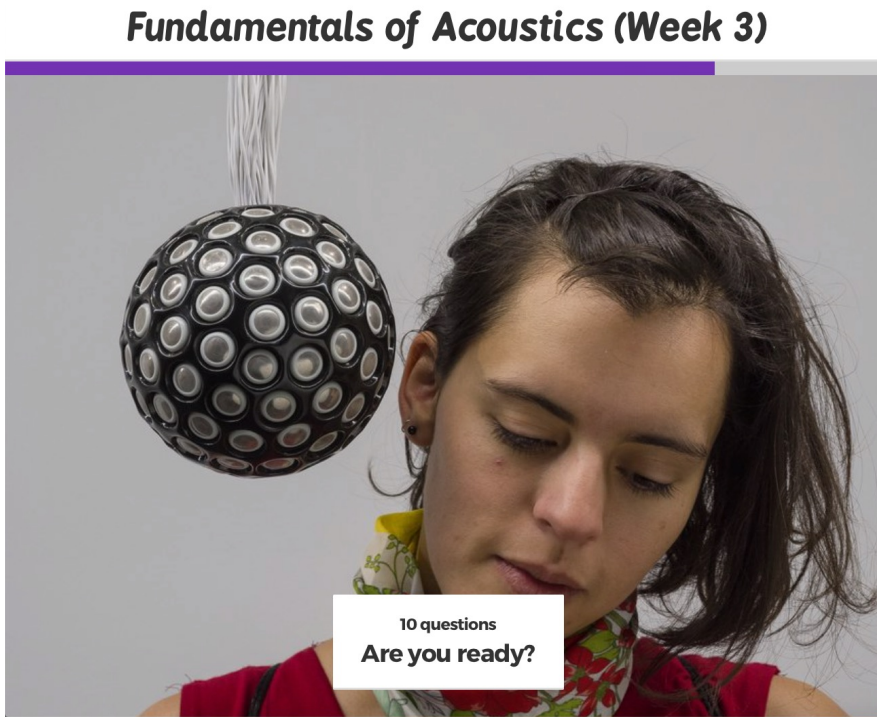
Quizzes (not part of examination)

Kahoot Quizzes during the course:

Fundamentals of Acoustics (Week 2)

Fundamentals of Acoustics (Week 3)

Building Acoustics



Lecturers/Instructors

Maarten Hornikx

Michalis Terzakis

Jieun Yang

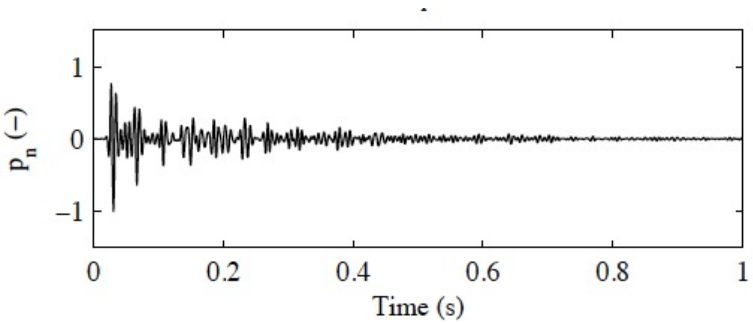
Constant Hak

For questions, please contact **Michalis Terzakis**
m.e.terzakis@tue.nl

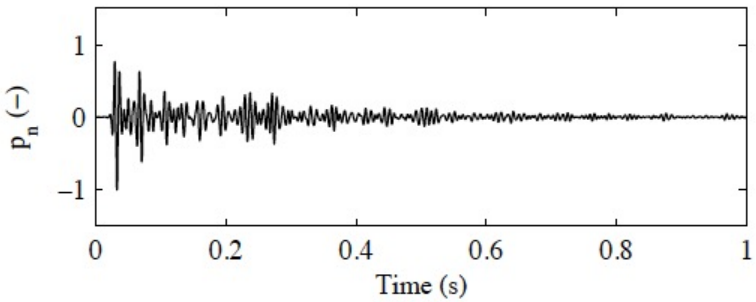
Techniques in Architectural Acoustics (7LY7M0)

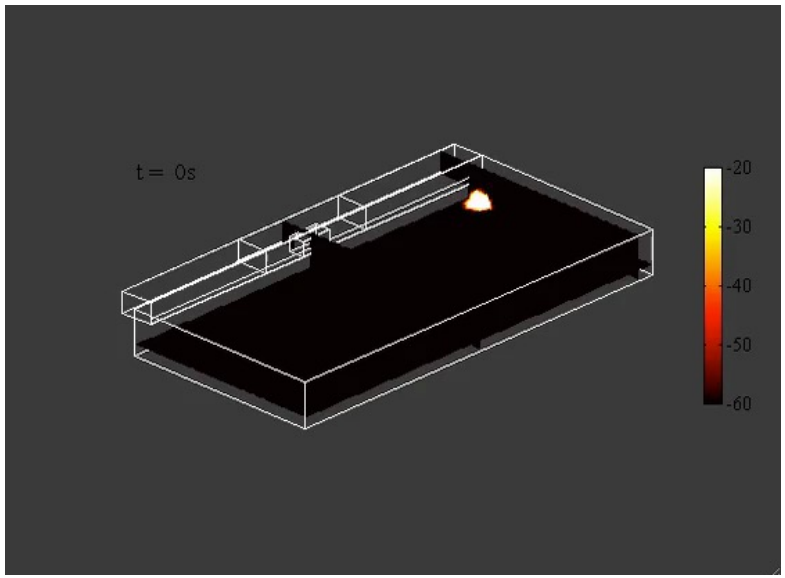
5 ECTS, Quartile 4

Experimental project



Computational project

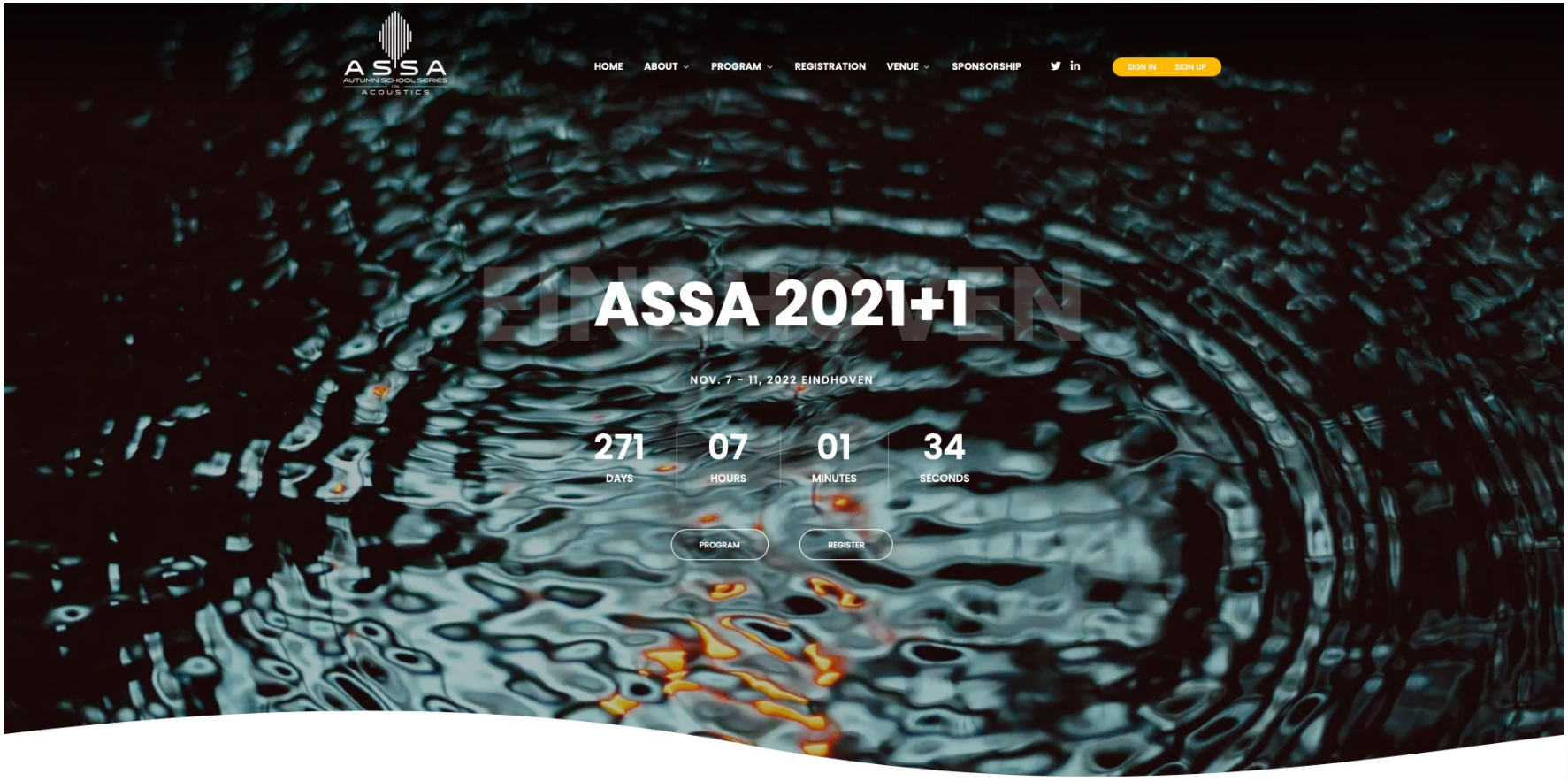




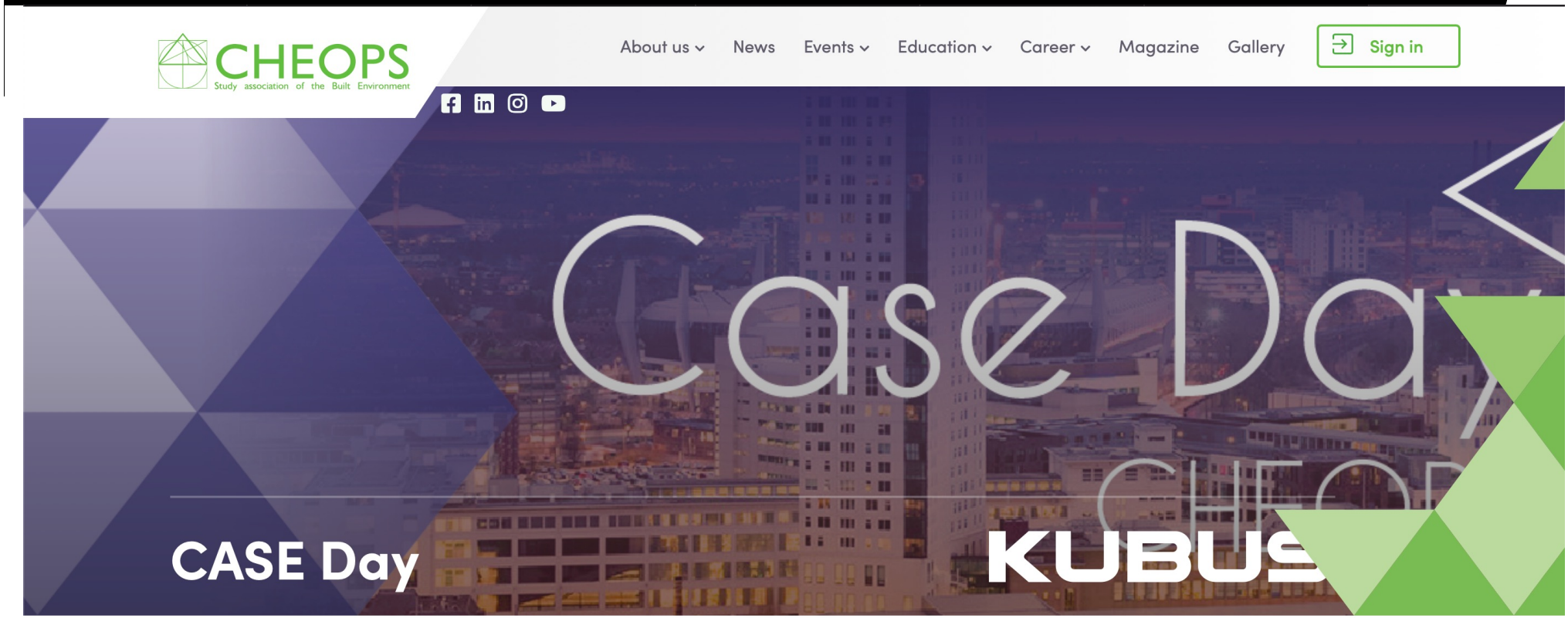
Bigger interest?

Autumn School Series **in Acoustics**

https://assaeindhoven.org



Announcement Cheops



CASE Day

On the 17th of February the long-awaited Case day will happen. This afternoon 5 companies will come to the campus to go through a case with a group of interested students. There is a case for everyone! The cases are based on the tracks of our department which means there will be a BPS, SED, USRE, AUDE & CME case. These cases will be interesting if you already have some knowledge in one of these directions, so it is also interesting for master students.