

Leaflet Master Class Room Acoustic Measurements and 3D Auralisation

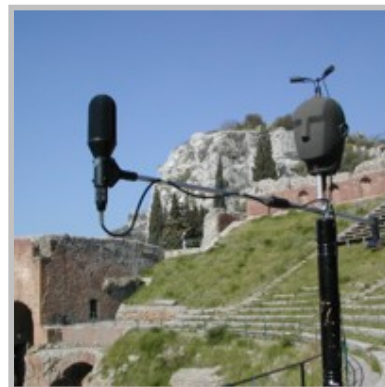
Contents

This Master Class by dr. L. Tronchin will focus on the questions:

- *How can room acoustic quality be described and measured?*
- *Which different degrees of precision are necessary?*
- *How can 3D auralisation be realized?*
- *Which degree of precision could be reached?*

The acoustic quality of a room can be measured in very different ways, depending on the purpose of the measurements. If the target is to merely measure reverberation time, a fair technique could simply involve impulse sounds like clapping, but for properly measuring impulse responses or realizing a 3D auralisation of the room, a much more precise technique is required.

Starting from the measurements and the evaluation of physical acoustical parameters, it is possible to reproduce the same acoustic sensation as measured in the theatre or auditorium. This is done by means of a 3D auralisation system which allows to virtually listening to the sound characteristics of the measured room in a dedicated listening room. This technique can also be used to predict the effect of changes in the room by using room acoustic prediction modeling.



During the Master Class measurements in an existing hall will be performed and a 3D auralisation of the hall will be realized and discussed. Also demonstrations of virtual performances of various well-known theatres around the world will be given, while focusing especially on Italian opera houses.

What will be presented?

- Room acoustics: sound propagation in enclosed spaces; the influence of the materials like sound absorption, diffusion and scattering.
- Room acoustic parameters for sound quality for listeners.
- The theory of time-invariant linear systems and the meaning and use of the impulse response (IR). Is it always sufficient to consider only the IR?
- The history and development of measurement techniques to determine room acoustic quality. From continuous pink noise to exponential sine sweep (ESS).
- The origin of auralisation until 3D auralisation. Theory and application.
- Workshop: 3D measurement, modeling and auralisation of a room.
- Discussions and considerations.

For whom?

The master class is primarily meant for acoustic consultants with several years of experience. The participants are expected to have considerable knowledge and experience in the field of room acoustics. Also, this Master Class can be suitable/interesting for PhD students and post-doctoral research fellows. The maximum size of the group is 12 persons.

The master

The class will be given by dr. L. Tronchin, who is associated professor at University of Bologna, Italy on "applied acoustics" and "environmental physics". He holds a Masters Degree in Building Engineering, a PhD in Applied Physics (Architectural Acoustics) and a piano degree from the Conservatory of Reggio Emilia. As acoustic consultant (Tronchin and Partners) he measured and designed theatres and other buildings in Italy and abroad, in collaboration with several architects, among them Richard Meier and Paolo Portoghesi.

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Guest speaker

The workshop about the measurements and reproduction by means of 3D auralisation will be given by Lamberto Tronchin and Mr. Andrea Venturi (from Tronchin and Partners). Dr. Tronchin and Mr. Venturi, (who holds a Master Degree on Informatics Engineering), will realize a practical example of 3D auralisation, including non linear effects, underlining the importance of the measurements and of the transducers for the final quality of the 3D Auralisation.

Dates

The Master Class will take place from Tuesday 24 January through Thursday 26 January 2012.

Location

Laboratorium voor Akoestiek (Level Acoustics BV)

The laboratory is located at the campus of Eindhoven University of Technology in the Netherlands.

Costs

The cost for attending the Master Class is:

- € 3.055 (VAT excluded) including a two night's stay in a hotel;
- € 3.165 (VAT excluded) including a three night's stay in a hotel;
- € 3.275 (VAT excluded) including a four night's stay in a hotel.

Also included are:

- A reader with literature and presentation sheets;
- Breakfast, lunch and diner.

Registration

You can register for the Master Class by filling in the paper registration form thoroughly and sending it to Level Acoustics by mail or email. Registrations will be accepted in the order in which they are received, up to a maximum of 12 participants. After receiving the registration form, we will send a confirmation and an invoice. The payment must be fulfilled within 30 days after receipt of the invoice. Your registration for the Master Class is confirmed after we receive the course fee. The final registration date is the 2nd of January 2012.

Cancellation

If you cancel more than four weeks before the Master Class starts, the course fee will be refunded, less € 327,50 for administration costs. If you cancel within one to four weeks before the Master Class starts, a refund of 50% of the course fee is given. Cancelling within the last week before the Master Class starts, implies no refund of the course fee. However, it is possible to send a substitute to follow the class, provided he or she has considerable knowledge and experience in the field of room acoustics. If there are not enough participants, Level Acoustics has the right to cancel the Master Class, up to one week before the start of the Master Class. In that case, the total course fee will be refunded.

Information and registration

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Download the registration form here:

<http://www.levelacoustics.nl/education/masterclasses/info/regformMC3Daur.doc>