

EduRa database: room models based on room acoustic measurements in primary and preschools

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Keywords: Room Acoustics, Spatial Audio, Room Impulse Responses, Binaural Room Impulse Responses, Spatial Room Impulse Responses, Binaural, Room models, Adult Artificial Head, Children Artificial Head

Grants: HEAD-Genuit-Stiftung under the project ID P-16/17-W

This database provides five representative rooms in primary schools and preschools for acoustic simulations. A set of (binaural) room impulse responses (RIRs) simulated using an adult and a child artificial head are included for each room.

Room acoustic measurements were carried out in Aachen's primary schools and preschools, where 8 classrooms, 10 playrooms, 3 gyms, 3 multi-purpose rooms and 3 sports rooms were assessed. The dimensions and room acoustic parameters were then clustered to achieve five representative sceneries. Shoebox models with little furniture were created using the average dimension of each cluster, and room acoustic simulations yielding for the average reverberation time of each cluster were done to obtain the (binaural) RIRs.

For each cluster is provided:

- The Sketch Up Model of the room (.skp-file).
- Room impulse responses (RIR) from eight omni-directional source positions and one mono receiver positions (.wav-files).
- Binaural room impulse responses from ITA adult artificial head (A-RIR) at one receiver positions and eight omni-directional source positions (.wav-files).
- Binaural room impulse responses from ITA child artificial head (C-RIR) at one receiver positions and eight omni-directional source positions (.wav-files).

The eight source positions were equally distributed around the receiver in two meters distance starting in the front of the receiver.

If you use this dataset for your research, please cite our work:

K. Loh, J. Burger, L. Aspöck & J. Fels. "EduRA database: room models based on room acoustic measurements in primary and preschools". Presented at the DAGA 2021, Wien, 2021.

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Der Datensatz wurde am 07.12.2021 korrigiert. - The record has been corrected on 07.12.2021.

Minor Changes on 07.12.2021: An error in the Description-EduRa_database_v20210921.pdf file has been corrected. In the initial version, the terms "Receiver" and "Source" were confused.

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- Room impulse responses (RIR) from one omni-directional source and eight mono receiver positions (.wav-files).
- Binaural room impulse responses from ITA adult artificial head (A-RIR) at eight positions and one omni-directional source (.wav-files).
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