3.11 Acoustic Simulator

**Keywords**

Acoustic simulator; Noise; Reverberation; Codec

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**Functional description**

Idiap maintains an open-source acoustic simulator that provides a large number of speech signal degradation processes. Based on a large database of 80h of real noise recordings, over a hundred impulse responses of speakers, cabinets, smartphones and rooms along with 15 different speech and audio codecs, this simulator stands out as a valuable pool of resources to develop detailed and robust models for speaker and speech recognition technology. It currently covers landline, cellular, satellite, VOIp, interview and playback scenarios.

**Innovative aspects**

- Large number of speech signal degradation processes  
- Open-source data and code  
- Expandable functionality

**Commercial application examples**

- Development of robust speech processing systems  
- Low-resource speech applications

**More information**


**Software & IPR status**

IP lies in the copyright of the code. Noise data and impulse responses are online resources released under a Creative Commons Attribution license. Codec code has more restrictive licenses.